General Theory of Collision (Third Edition)

«Power Generation with a Mechanism that Provides Weight»

A Power Generation System with Immediate Effects for Resolution of Global Warming and Environmental Issues

Muneo Matsunaga

Foreword

Once upon a time in my childhood, when I was about to enter or just had entered an elementary school (only recently I recalled this more or less exact timing), when I woke up from sleep, Figure 1 on page 7 of this book popped up in my head. I already knew then that it was related to something curious, and couldn't stop thinking about it.

Then, after a while, an idea depicted in Figure 3 on page 11, came to me, and I realized I'd stumbled upon something truly amazing.

I also thought that this idea would serve me with my future. But I was afraid that if I said anything about it to grown-ups, they would laugh at me, and thus it wasn't until I was a junior in college that I recalled it. Looking back now, though, I suppose it always remained in my subconsciousness.

In college I majored in physics, though I didn't know why at the time. Then in my junior year I completely recalled my childhood ideas, and thought that they would lead to pollution-free power generation. But back then neither did I know how to link it with physics, nor the formulas were ready, and as a result it took all these years, up to recent days, to formulate them.

I spent my late twenties away from physics, but I couldn't forget my ideas, or should I say, they would not leave me. So in my thirties I began studying with an aim to start over from the very beginning.

My ideas may still be incomplete, but I hope recording them this way would serve as an example of original minds, and that I hope my readers would find them interesting.

On Publishing the Second Edition

The first edition had not contained enough academic explanations and proofs, in a rush to resolve the global warming problem. Thus, with the second edition, I paid a close attention to and did my best to thoroughly identify all matters related to hierarchy in my research, and to describe its results.

Of course, I am well aware that this alone is still inadequate. At the same time, I felt that I reached a certain milestone with it, and thus came about the second edition.

The first edition had contained errors in some of the numerical formulas, and given this sort of situation, I was truly happy to be able to publish the second edition. Although global warming is still a critical problem for us without any solutions in sight, I hope the second edition provided some hints toward its resolution.

I will continue to update my website and hope to post additional information there. By the way, in my student years I was tested on proving the chain of plutonium growth, but now I can say that it was obviously a mistake.

I would like to also thank everyone at Bokkasha Co., Ltd, especially Mr. Yoshikawa.

Due to the nature of this writing being a thesis, there may be many points that readers will find dissatisfactory and/or insufficient in certain information, but I hope that they will get the gist.

On Publishing the Third Edition

6 years went by since the publication of the second edition, and I had to wait for more than 2 years for one reason or another to publish the third edition. To my readers, I can only apologize for letting them down this way.

However, with the third edition, both the content and the full text are totally different from those of its predecessor, and this time they have been formed into a book, which was made possible only thanks to my dear readers. I worked on this edition feeling their encouragement and a sheer gratitude for them.

There are also many new discoveries, and I myself am satisfied with how the third edition turned out.

The biggest discovery of all is my invention and discovery of a picture, i.e., machinery, which is in the same dimension as the Planck constant and quantum mechanics. In other words, I can now explain Planck's Quantum Theory in terms of elementary particle physics.

There are many other new discoveries as well, but I would like my readers to discover and enjoy them.

You will find in the text my mentioning that the bar to be not smaller than the Planck length, but this is for the sake of convenience only. Since in fact this book is related to superstring theory, and I believe we may call the book one picture of this theory, bars smaller than the Planck lengths are also allowed. I'd like to leave the explanation for this to superstring physicists, and rather concentrate on describing what will come of it.

Specifically, I hope this book will provide some hints in explaining the mechanism of the Big Bang and the Higgs field vacuum (super space vacuum) that I believe will be explained in the future.

Also, I derived a numerical formula for neutrino masses, but obviously under the condition of being smaller than the Planck length.

However, for the sake of an explanation in terms of quantum mechanics, I found this to be inconvenient and consciously made a choice of assuming that it was not to be smaller than the Planck length. There may be many objections to this, but I hope my readers will allow me to elucidate this theoretically and explain the strong interaction successfully, which will be a big problem in the future.

I only discovered a numerical formula to derive neutrino masses by using the Higgs mechanism, and I'd like to leave its precise explanation to my readers and future physicists.
My sincere wishes for their success.

On Writing

What is a conservation law? What are scientists aware of behind their thoughts, and how is a so-called philosophical theory of the natural philosophy made? I've clarified what kind of fundamental pictures scientists draw in the back of their thoughts, and how they develop science based on those pictures. As a scientist, I tried to depict the fundamentals to success. I have never seen a book that describes energy in terms of quantum mechanics. After all, this book demonstrates that this picture is the same as the Planck constant, but that's quantum energy, and not a theory on energy in terms of quantum mechanics. Although there is no such thing as quantum mechanical statistics, today we are in need of describing various fields, or rather, parameters, in terms of quantum mechanics. Proton decay will not be discovered as long as quantum mechanical statistics is not established. My ideas came to me when I was only 3 years old. At first, I couldn't comprehend what was going on, but as I continued my research, the meaning and significance of these ideas became completely clear to me, though without any particular reason. I summed them up in the format of a book, which allows a freer form of expression than theses and scientific journals. Of course, I couldn't publish them in arXiv, and panicked in trying to obtain novelty. I have only God to thank for leading me to my ideas. This book is similar to my «General Theory of Collision,» but this one has become entirely different from its predecessor. I believe I've succeeded in summarizing important and also necessary concepts of conservation laws and collision in one volume. It may look very different from the law of conservation of energy that one learns in high school, and looking at the entire physics as its target, I realize that it needs rethinking. It's also something that needs saving. The theory of relativity is mistaken in this respect. Only fulfilling conservation laws, while correcting the mistakes of the theory of relativity leads us to the completion of the quantum theory of gravity. It is superstring theory that rewrites the theory of relativity, and that's exactly what superstring theory is doing. What I'm doing is not superstring, but I believe I've provided some hints on the future direction of the nature and superstring. It is said that the strong interaction is explained by a theory of gravity, but this can be done by building dispersion relations as a complete theory. This is a big issue that the young is entrusted with, and I hope they will take on the challenge.

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I. Power Generation with Stars' Gravity System

The term «collision» refers to the collision of high energies in terms of the theory of relativity. However, the collision discussed here is not only that, but also the general background (the hierarchical picture of elementary particle physics) of the collision. Having said that, I know I may have betrayed the expectation my readers might have gotten from the title of this book, thereby causing a certain level of confusion, and yet I have proceeded with my writing. It is worth noting that I am taking on a challenge with this third edition by focusing on the consistency of my theory rather than on its strictness. Thus the book may lack strictness on some fronts, but this is because I think it can be added later on. Also, conservation laws will probably be a transverse element throughout the book. Usually, a thesis is written in the order of phenomenon, theory, and then picture, but in my case it is completely in the opposite order, and I am well aware that this is making some parts of this book difficult to understand. I can only hope the readers will keep this in mind while continuing with the book. At this point, I would like to note that having spent 10 years on learning how to play the piano, since the age of 3, I only feel comfortable with artistic methods, and could not go on writing about physics any other way.

0. abstract

While there are various ways to generate power, I would like to ponder upon means that are compact, highly efficient, pollution-free and do not make thermal movements.

Imagine a case with a seesaw at a circus, where a man (heavy weight) jumps on one end of the seesaw to lift a woman (light weight) on the other end toward a trapeze midair. If this were done with people of the same weight, the one lifted up would only reach the same height as that of the person jumping. Now, consider this scene carried on by people with different weights, as in the initial case with a man and a woman. The woman would jump higher than the man. To achieve this with people of the same weight, the axis of the seesaw would need to be tilted to either side, i.e., the seesaw would need to be asymmetrical. Making the seesaw asymmetrical has a meaning, as explained later, of serving as the base of neutrinos gaining mass by the weak interaction. And now let us calculate by replacing the circus members with balls of the same weight. When the bias of the axis becomes big enough, the 2 heights become quite different. This is spontaneous symmetry breaking, and demonstrates that inflation takes place after the Big Bang if the symmetry breaks even a little in the early phases of the universe.

With this, I can assume the above seesaw case (but with balls) to simulate a large (heavy) ball colliding with a small (light) ball. I will consider now a system to generate power by a collision of balls of the same weight.

The question is, can we obtain the energy necessary to return the balls, which serves as a source of power, to their original positions, and also enough energy for generating power (electricity)?

Both of these can be achieved by separating the energy necessary to generate power (electricity) in performing a certain operation (automatic return to original positions). This gain has already been calculated and proven. In addition, it takes very little time to make one cycle, and the theme of this research is to indicate that the power generation cycle holds as a result.

That is, a theory consistent with feedback theory has been built.

Science cannot exist without satisfying reproducibility, and I hereby stand to say that the phenomena discussed below do satisfy it.

I have reached a conclusion that energy can withstand enough even at the stage of power generation. In paper-based calculations, the energy does not feel so strong, but I believe it actually can bear the experiment.

This is the theory of virtual collision that includes converted mass (X) in the two-body problem.

Also, the content discussed below is a developed form of the Dirac scattering problem with an external field, i.e., left-right asymmetry, and of course, it fulfills Thomson's low energy theorem.

In addition, I have come up with a way to generate power without byproducts, i.e., pollution.

1. Before Power Generation

Hydroelectricity generates power using gravity, from falling water, but if traced to its origin, hydroelectricity is based on the energy circulation from heat energy of the weather in the thermodynamics of the earth, and uses a part of this dynamics. Then, how can we generate power with only gravity? I would like to also further explain how we can generate electricity from it. First, I would like to consider what natural phenomena can be copied or used, aside from the ones hydroelectricity uses, to generate power. Vibration is used directly, but I am curious as to how that is done and controlled because vibrations in physics are necessary in explaining its phenomena.

First, let us look at Figure 1, which represents the action of force and velocity. In other words,

$$F \times v = \frac{d}{dt}\left(\frac{1}{2}mv^2\right) \cdots \cdots ⓪$$

This equation is in watts as far as dimensions go, and thus seems to be suitable for power generation. It is action divided by time. What this means is I can consider a collision of objects from this. Usually, when a large (heavy) ball collides with a small (light) one, the kinetic energy of the big one before the collision is greater than that of the small ball after collision. Figure 1 depicts the same phenomenon with 2 balls of the exact same weight.
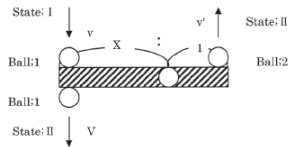
Figure 1: An Indirect Collision Between 2 Objects
State 1: The state immediately before Ball 1 falls and the bar rotates
State 2: The state where the bar rotates, and Ball 2 is about to move

What will happen then? To make the long story short, the kinetic energy of Ball 2 in State 2 is greater than that of Ball 1 in State 1. Moreover, even after adding energy necessary to return Ball 1 to State 1 to the kinetic energy of Ball 1 in State 2, the kinetic energy of Ball 2 in State 2 still wins over. Now, I would like to prove this step by step.

I assume that an ideally complete elastic collision takes place at each point of the collision. That is, the bar and the balls are sufficiently hard. Also, I assume that the bar rotates with a mass of 0 and ignore the bar's size, thereby only considering the ratio.

The collision needs to be considered only in torque to facilitate my calculation, so I am drawing the bar as though it is of a certain size only to facilitate comprehension. But, in reality, it does need a small size in the vertical direction in order to provide torque. The horizontal size (X) is taken into consideration in my assumptions. I further assume here that the collision takes place in a quasi-static process.

Planck length: $lp = 1.1616199 \times 10^{-35}$ (m)

Also, it is assumed that there is no friction at each point of the collision.

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(v: Velocity of Ball 1 in State 1,
V: Velocity of Ball 1 in State 2,
v': Velocity of Ball 2 in State 2)

Therefore, from the laws of momentum conservation and of conservation of energy,

Equation:
$$Xmv = XmV + mv' \quad \cdots\cdots ①$$
$$\tfrac{1}{2}Xmv^2 = \tfrac{1}{2}XmV^2 + \tfrac{1}{2}mv'^2 \quad \cdots\cdots ②$$

Solving this with respect to V and v', from equations ① and ② we obtain the following:

$$V = \frac{(X-1)}{(X+1)}v \quad \cdots\cdots ③ \qquad v' = \frac{2X}{(X+1)}v \quad \cdots\cdots ④$$

From equations ③ and ④, if the energy of Ball 1 in State 2 is expressed as E_3, while the energy of Ball 2 in State 2 as E_2, we obtain the following:

$$E_3 = \tfrac{1}{2}mV^2 = \left\{\frac{(X-1)}{(X+1)}\right\}^2 E_1 \quad \cdots\cdots ⑤$$
$$E_2 = \left\{\frac{2X}{(X+1)}\right\}^2 E_1 \quad \cdots\cdots ⑥$$
$$E_2 - E_1 = \frac{(3X+1)(X-1)}{(X+1)^2}E_1 > 0$$

(Since X> 1) ...... ⑦
(E_1: Energy of Ball 1 in State 2)

In other words, $E_3 > 0$ always when X>1 and $E_1 > E_2$ as well. E_2 can be regarded as the energy from the force restoring Ball 2 in State 2, where mass (m) and object (Xm) virtually collide. E_3 is the surplus energy in this collision.

Now, I have proven that energy can be extracted from gravity.

This is an equation similar to the one described on page 82 of «Conservation of Momentum and Non-Preservation,» one of my referential resources. What I am attempting to do is arbitrarily trigger and control a phenomenon similar to that described in the above-mentioned literature, but with 2 objects of the same mass. I hope this helps in the interpretation of equations ① and ②.

Also, collision not only receives an action, but also provides a reaction as well, as seen in equation ⑥. According to Newton, the magnitude of an action and a reaction can be estimated from the rate of change in energy. This is precisely equation ⓪. Therefore, equation ⑦ is provided as reactive energy. Also, if equation ⑥ is plotted in a figure, it will be the same figure as S_1 in Figure 317 on page 145 of «Classical Mechanics: First Volume» by H. Goldstein.

There is a close relationship between an action and a conservation law. Where the former exists, the latter is always confirmed.

2. On Perpetual Motion Machines

Though the aforementioned may be misunderstood as a perpetual motion machine, I need to give it some thought.

First of all, a perpetual motion machine is energetically closed (More on this later; Though it naturally does not apply to the machine I am describing, $\Delta E = E_2 - E' < 0$ and it means that it does not function without

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external energy), and like the Waterfall by M. C. Escher, it is depicted as though the perpetual motion machine holds with 3-dimensional phenomena taken as fictional matters in 2 dimensions. However, when drawing a 3-dimensional image in 2 dimensions, it is an iron-clad rule to divide its unknown parts in the 2 dimensions and draw the image. Figure 1 is drawn along this line. Also, gravity is open, and its phenomena would also include unpredictable ones as well, and I drew Figure 3 to witness them. For Figure 3 to be realized, I need to think in the opposite way of the aforementioned Waterfall by M. C. Escher since the Waterfall holds by being embedded in 2 dimensions and not in 3 dimensions. Figure 3 does not hold in 2 dimensions, but does in 3 dimensions. By applying Figure 3 to the self-organizing universe, we can recognize the presence of surplus dimensions.

Also, Figure 2 can be drawn from equation ④ with v' approaching 2. Specifically, if a large (heavy) object collides with a small (light) object, momentum of the small object never exceeds 2 times. If it does, it means that a conservation law gets broken in equation ②, thus creating a perpetual motion machine.

In other words, if momentum of the small object exceeds 2 times (where v'> 2), X <0 needs to hold, but since I am considering X> 1 for the moment, the small object's momentum cannot exceed 2 times. That is, energy acquired from the collision cannot be $4E_2> E_1$ when v'> 2, so I predict that with the fast breeder reactor "Monju" uranium (U_{238}) cannot form plutonium (Pu_{239}) from 8 or 9 times of propagation, resulting in a collapse. Or, rather, it is completely impossible. Even if it reaches criticality, and the operation of «Monju» is said to launch in the future, global warming will not wait.

"Monju" needs to be destroyed. Criticality does not generate energy. What we need now is power generation that does not emit carbon dioxide. To begin with, the assumption that approximately 1.2 times of plutonium can be produced is highly questionable, even if successive explosions take place when neutrons face uranium with high energy from plutonium. It is questionable because order to realize high energy with the first neutrons, the amount of energy we may think we gained with a surplus needs to be offset, which is an entirely meaningless result I am sure we will get. In reality, we are not even satisfying the initial condition, let alone offsetting it.

"Monju" is an idea that needs too much effort to produce too little and is senseless from the viewpoint of quantum mechanics. «Identical replication» should be prohibited. The chain reaction of plutonium growth can occur only when energy is continuously provided from the outside. The energy «balance» is not in balance. The same goes for nuclear power plants as well.

"Monju" is in principle a perpetual motion machine.

"Monju" does not function. It has not been in operation, and naturally will not be in the future, either.

"Monju" simply adds energy from the outside and experiments with the production of plutonium.

"Monju" also has the same operation limit as nuclear power plants. Criticality accidents with sodium leakage are simply due to draining liquid sodium, which is unstable at room temperature, into fragile and complex pipes.

"Monju" breaks both laws of conservation of energy and of conservation of mass. In the theory of relativity, it is termed as breaking the conservation of mass, but what is happening is that it becomes difficult to move accelerating substances relatively to a field, and the mass of the accelerating substances itself can be considered to not change. The theory of relativity is characteristic in that it needs to look for objects that are relative to objects in motion (locality), as in an electromagnetic field for electrons, and light for neutrinos.

To begin with, it is impossible for human beings to govern metempsychosis. In other words, what is being done with «Monju» is an attempt to create something that does not exist in the nature's mechanism. How can we explain degradation caused by reuse of plutonium? It apparently decays in the second and third rounds of propagation.

"Monju" encompasses within itself a theoretical self-contradiction.
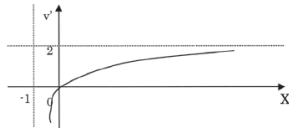
"Monju" is not science.

Therefore, Figure 3 does not conflict with perpetual motion machines. It gets updated with every cycle, just like with gravity!

That is, it automatically initializes itself.

The Waterfall by M. C. Escher uses the fact that ups and downs cannot be judged in 2 dimensions. Figure 3 clearly represents a machine that can generate differences in height in 3 dimensions.

Figure 2: Energy After Collision of 2 Objects

"Monju" is not science, and the same goes for other breeder reactors.

3. Power Generation

Figure 3 illustrates the details of my concept. Being 2-dimensional, it is incomplete, but I would like to prove that it holds with 3-dimensional thinking, i.e., topologically…This is a 3-dimensional version of the Waterfall by M. C. Escher. Before that, let me explain Figure 3. Ball 2 is returned to where Ball 1 used to be, due to Ball 1 falling, and thus these 2 balls switch their positions. Then, from this, I will prove that we can obtain energy.

Let E' represent the energy required to return Ball 2 to the position of Ball 1. Then, from equation ⑤,

Equation:
$$E' = E_1 - E_3 = \frac{4X}{(X+1)^2} E_1 \quad \cdots\cdots ⑧$$

Therefore, if ΔE represents the energy obtained in Figure 2, from equations ⑥ and ⑦,

Equation:
Total Energy ;

$$\Delta E = E_2 - E' = \frac{4X(X-1)}{(X+1)^2} E_1 > 0 \quad \cdots\cdots (*)$$

(Since: X>1)

When X is set to about 5,

Equation: $\Delta E = \frac{20}{9} E_1$

This proves that as Ball 1 falls, it generates power and at the same time moves Ball 2 to the position of Ball 1, while Ball 1 in turn returns to where Ball 2 was.
(Ball 1 is the first falling ball, Ball 2 is the feedback ball, and «h» represents the height of Ball 1 falling to State 1)

I hereby name this machine «Shiranui» in Japanese, and «Automatic E. M. Heavisade 1970» in English, after Oliver Heaviside whom I respect.
Figure 3 illustrates all of this in detail.
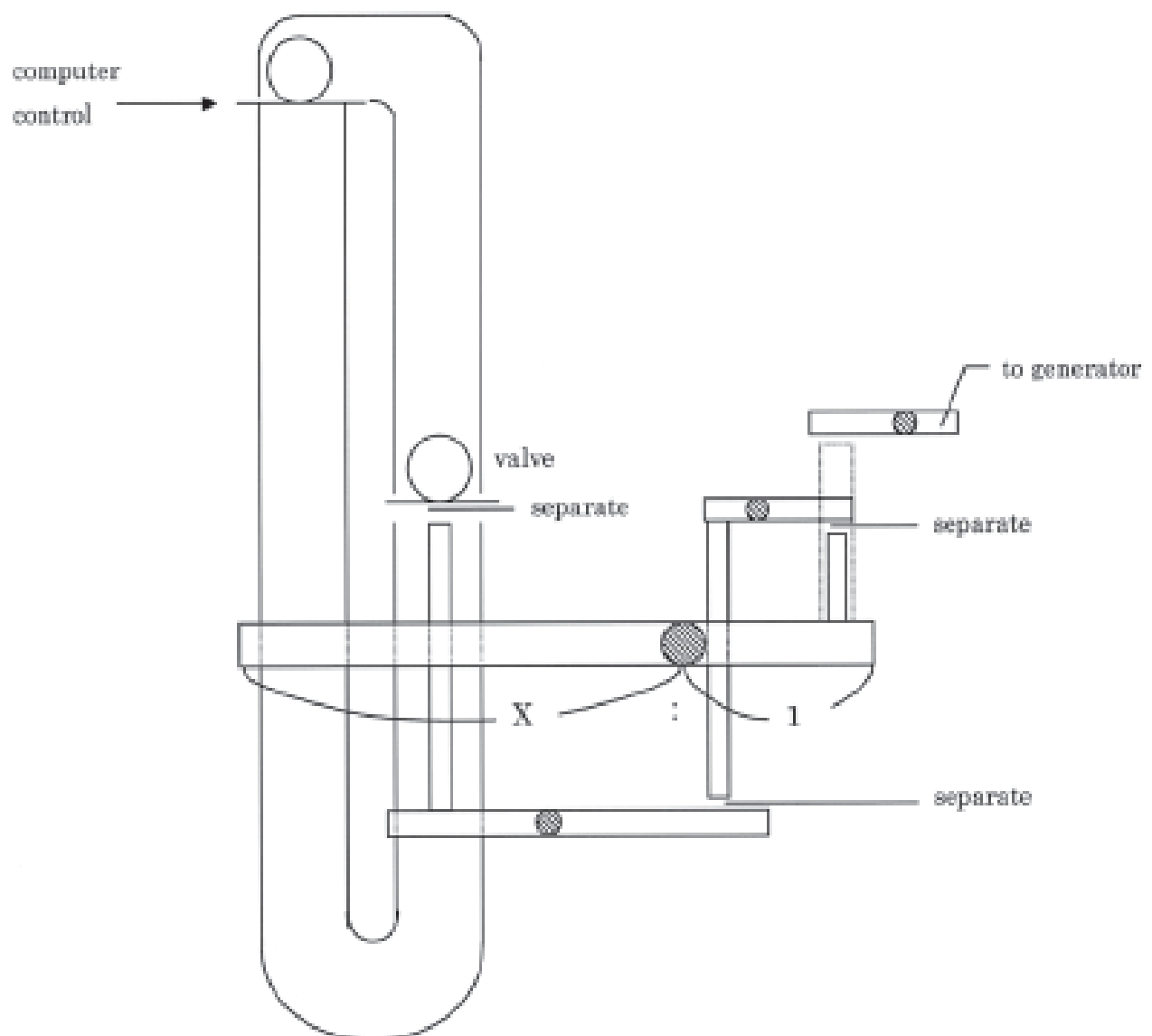
Figure 3: Power Generation System

In actual calculations, with weight of m = 100 (kg) and height of h = 5 (m), we obtain approximately 80,000 kWH of energy per unit of machine described by Figure 3. This is equal to the amount of power generated by 1 windmill at Soya Misaki Wind Farm. If we are to build 1,000 units of this machine, we would achieve generating approximately 80 million kWh of energy. If we were to build only 1 such power plant, it would generate power in the amount a few times more than the total amount of power generated by all hydroelectricity stations in Japan. Building 2 or 3 such plants would more or less match the total amount of Japan's current power generation. If we consider means other than power plants, we could deploy 1 machine in each household, as well as set up these machines at electric stands (For more, refer to «IV. Toward the Days of Electricity-Based Societies»). Any of these options would generate enough power to match the current total amount generated in Japan. However, this is only in theory, and if we take into account factors

such as the rate of converting energy, it is clear that we will need 7 or even 8 power plants, each with 1,000 power generators (2 or 3 are not enough, and 5 or 6 may not be, either). In addition, since this power generation is done not by heat, but by direct generation with mechanical power, I believe the rate of converting energy would be high. In fact, I believe it would be as efficient as thermal power generation. However, considering the rate of converting energy, I would recommend 5 or 6 power plants.

By the way, the rate of converting energy for solar power generation is approximately 10%, and this low rate seems to be due to weak energy. The maximum total amount of energy obtained by solar power generation can be calculated as follows:

Assumptions:
- Average direct insolation per month: 0.5 kW/m^2 per day, according to the scientific chronological table
- My machine is set up in 10 million households
- The area of the roof: 25 m^2

7,200,000 kWh generated per hour (at 10% energy conversion rate)

With an even higher rate of converting energy, say at 20%, we would get 14,400,000 kWh, and if we assume the machine is set up in 20 million households, we would generate 28,800,000 kWh, which is about one-tenth of the power currently generated in Japan. Therefore, I can say that we will need a land with a considerable area in order to contribute to CO_2 reduction with solar power. Moreover, if oil, coal and such cannot be used, and electrification of homes and the use of electric cars progress, with gas becoming scarce, I think that electric power, known today as renewable energy, will be able to generate 10%, at most, of all power currently generated in Japan.

4. Observations
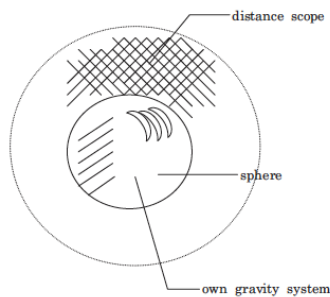
Let me stop here for a moment and consider the earth's gravity system. To maintain its shape, the earth has its own gravity system. In times of earthquakes, the gravity near their epicenters shows a high value, and this is an indication that the earth has its own gravity system to maintain the shape. This is done at the speed of light with systems depicted in Figure 3 (the feedback part of Figure 3). This is because gravity propagates at the speed of light, i.e., it shows causality. The earth constantly fluctuates by repeatedly contracting and expanding, i.e., stellar pulsation, just like the earth crust gets bent by the tidal force. According to the uncertainty principle, all masses fluctuate. In fact, the sun's surface vibrates every 5 minutes since it cannot self-rotate without contracting. It can also be said that the gravitational energy as the remote action resulting therefrom (the same as the connecting part to the generator in Figure 3) becomes greater than its own energy (self gravity system). It can then be concluded that it does not exceed 4 times, from equation (*). In addition, gravity manifests remarkable phenomena on the outside and has more energy than it does inside. The solar system has gravitational energy larger than the energy needed to function, and also has energy to interact with other planetary systems. Based on this, gravity makes sense as vibration, and not as a virtual particle (graviton). I conclude that the gravity follows the oscillation theory because vibration includes a force, which suggests quantization. In other words, I deem it more preferable to apply harmonic oscillator than a graviton. In collision, oscillations are described continuously over time. It is ideal to consider this in the same manner as a vacuum tube because strings can be seen as a collection of an infinite number of transducers. Thinking about this like light will result in contradicting complementarity that particle properties and wave properties cannot be caught simultaneously. That is, if we take particles as gravity, its complementarity should exist. It is superstring theory, but there is an issue with the way to do so. There are not many pictures, either. However, this is also consistent with superstring theory. In complying with AdS / CFT, gravity is considered as a fluid, but if we consider that gravity propagates through space, we cannot explain the force as a remote action. It becomes possible, though, if we consider the oscillation theory. Indeed, in the quantum theory of gravity, gravity propagates as a vibration of closed string, and the body of gravity propagates as waves via fluid elements inside a star. This is because planetary gravity is determined by the dynamics and types of elements inside planets. In fact, it is said that gluons may be responsible for it. In addition, gravity inside a star is set by distance (r) from its center, due to the dragging effect of the inertial system as per the theory of relativity, with a consideration to Figure 3. Then gravity inside the star is derived by quantizing the gravity. The earth is also colliding constantly through the sun and gravity. This is also valid as a zero-point vibration since there is energy at X = 0. If we convert this with X = 1 in Figure 3, in equation (*), the sum of its internal gravitational energy can then be assumed to be equal to the kinetic energy of the earth 8.470×10^{35} (J) with $\Delta E = 0$. Here, I propose a method to derive the earth's internal gravity from the dragging effect of inertia with methods that are opposite of those used in deriving force de Coriolis. The external gravitational energy is derived from the general theory of relativity. Since it is a known, as from the aforementioned, from this and equation (*), the dragging effect of inertia sets the earth interior g (r), but the relationship between the sum of the external gravitational energy and universal gravitation which is an external action is obtained. Once we obtain an equation of motion, the internal gravitational energy of the earth is in turn obtained from the equation and the dragging effect of inertia. Then the relationship between the internal and external

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gravitational energies becomes clear, as well as the relationship with internal gravity g (r). Indeed, even without quantizing gravity, the de Broglie wave of gravity can be felt. Is it not the goal to integrate the universal gravitation of the earth's each atomic or particle that constitutes it for the entire earth? Is this not the quantification of gravity?

The sum of the gravitational energy of a star can be divided into the energy of the star itself (internal energy) and the energy needed in interactions with other planets (external energy), and they can be assumed to be determined, to some extent, by the general theory of relativity. As for the solar system, it also has surplus energy from the energy needed in interactions with other planets, and forms a part of the galactic energy. In the case of ordinary stars, gravity as a remote action is surplus, but the same cannot be said about black holes. Gravity acts on the outside of substances, but black holes are noteworthy in that the complete opposite phenomenon is clearly witnessed. Magnetic forces act in conjunction with substances. When nuclear fusions no longer take place in stars, and stars fail to form their own gravity to keep their shapes, the stars get crushed by gravitational energy, i.e., a remote action, and turn into black holes.

Also, I would think that the relative positions of planets are somewhat determined by the general theory of relativity, as with the moon stabilizing the earth's revolution around the sun. Moreover, with a certain amount of time passing after stars are born, large planets are thought to almost never collide with one another since the sphere where stars are born is limited to some extent.

There is a limit to the energy obtained in Figure 2 and equation ④. Planets pass by when the acquired energy needs to be more than 4 times, specifically when a planet passes close by another one, and the momentum energy is more than 4 times the gravitational energy at the point where it passes. At that time, the earth would be shaken by a centrifugal force, and according to Mach, mass is not an absolute existence, but rather relative only. Neither absolute space nor absolute mass exists. A stationary mass is the sum of the object's own nuclear energies, i.e., the coefficient of the static energy of the object, and changes over time.

In the case of neutrinos, their masses are not called stationary masses because they are defined in motion. They should rather be called permanent masses.

That is, there is no such thing as an absolute mass, and what is surely known is the existence of interactions and energies, and where there is energy, an interaction, or a substance, there is a mass. This is the definition of a mass. However, a mass is relatively challenging to handle because it is a physical quantity that changes by transformation. If we are to treat it in terms of the theory of relativity, a new concept of transformations becomes necessary. However, transformations are generally caused by energy, especially external force. I know I am repeating myself, but what kind of a concept would a new transformation be, if we consider that masses are also energy? Would this thesis serve as a law of energy conversion? I did intend it to. In the weak interaction, a substance absorbs energy and gains mass. If we apply this to the power generation part of Figure 3, the same can be said about gravity. In other words, when entering the earth's gravitational field (space), a planet gains energy by way of Potential Energy and obtains mass.

But, at this point, I would like to ask what mass is. As far as mass is concerned, it needs to be divided into stationary and inertial types. Static mass is the (atomic) energy of an object itself, whereas inertial mass is the coefficient in an equation of motion of the object, can be simply operated, and is fundamentally different from static mass. Therefore, in terms of the theory of relativity, the earth's internal gravitational energy is nuclear atomic energy, and its external gravity energy can be distinguished from kinetic energy. If we talk about the earth, and assume the mass of the former (necessary to keep the shape of the earth) to be absolute mass, and the latter (for the revolution of the earth) to be relative mass, weighing the former would be the same as weighing absolute mass. Then, how can we measure relative mass? Of course, we do so with equation (*). Also, of course, I would think that the same would apply to weighing the mass from the weak interaction. Elementary particles obtain mass from the weak interaction, and this proves that they obtain mass by the weak interaction (I would assume some equations show this). The weak interaction does not give absolute mass. Therefore, we need an equation to transform weak interaction energy and obtain mass. By this, we have demonstrated the relativity of mass.

At this point I would like to consider equation ④ by introducing what Archimedes said about the volume and column of cylinders. In a situation with «a cylinder with the height equal to the diameter of a ball, when the large circle of the ball is the cylinder's base, has mass (volume) of 3/2 times the ball and surface area of 3/2 times the ball,» if X=3 in equation ④ the coefficient of (the right side) is 3/2. To put it differently, with the former, we can say that it would take 3/2 times time if we filled up the inside of the ball and cylinder. With the latter, it would take 3/2 times time if we placed a piece of paper, regardless of its size, over them. Also, when X = 3 in equation ⑥, we would simply need 9/4 times the energy in order to build a structure with the same material. The reason this holds is that equation ⑥ expresses the conversion of energy.
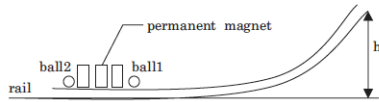
Figure 4: Collision of Ball 1 and Ball 2 via Permanent Magnets

As aforementioned, I would like to also point out another reason "Monju" does not satisfy the first condition, and illustrate another example of it being a perpetual motion machine. Suppose that Ball 1 falling along a rail from a certain height collides with a spring with Ball 2 of mass shrunk from the natural length, attached at the location Ball 1 slides into. At the moment of the collision, the spring forces out Ball 2 and a complete elastic collision takes place at every point. In other words, Balls 1 and 2 collide with one another through the contracted spring. Then the velocity of Ball 2 at the moment it gets forced out becomes greater than that of Ball 1 right before the collision. Can we get energy by this difference in the kinetic energies? The answer is a «No.» This difference is not sufficient to return Ball 1 to its initial height and Ball 2 to its initial position (the spring in the contracted state). Naturally, it is an irreversible process, but it is the same as «Monju» not satisfying the initial condition. With this, it is easy for me to indicate "Monju" is a perpetual motion machine.

Also, what about the case of running a tram with the machine in Figure 3 on it? I believe this to be possible, and the machine will become a gravitational engine.

5. Conclusions

Since I have not mentioned heat and energy in this research, below I will explain the relationship between the thermal action (movement) and the rotation of the bar. Stars contract and expand by heat actions inside them, and the rotation of the bar is an alternative to these heat actions.

Gravity is specific in that it can categorize energy into the one that is necessary to keep the shape of stars, i.e., own energy, and remote energy that creates relative motions between stars. Fundamentally, they have the same characteristics of gravity, but it can be induced that the gravity of stars realizes these energies.

That is, in Figure 3, since the kinetic energy of Ball 1 is the same as gravitational motions of a star, just as with contractions due to the star's own energy, the feedback part corresponds to an expansion, and the power generation part corresponds to remote actions.

In addition, since collisions seem to be an extension of vibrations due to contraction and expansion of the stars, my conclusions are viable. More specifically, in holistically observing collisions of each atom within a star, ordinary black holes do not generate jets, but their collisions, i.e., their coalescence causes black holes to expand. The sum of the energy outside the event horizon does not usually exceed 4 times that of the energy inside. However, something close to this takes place with very large black holes. Therefore, in general, this thesis has shown that black hole jets are not normally caused by black hole collisions or coalescence, but the collisions do take place when the sum of the energy outside the event horizon in very large black holes exceeds 4 times that of the inside. If the bar of a barred spiral galaxy is even a little asymmetrical, ∆ E is generated, and from equation (*) in order to avoid self-destruction, it can serve as the basis for generating a vertical jet. In fact, about half of spiral galaxies (most of active ones) observed are

barred spiral galaxies. Our galaxy is also one, and it is thought that a bar exists near its center. But if a black hole jet's energy is less than the energy absorbed by the black hole, it is estimated that it gets consumed as energy of inflation. At that time, the jet content can be seen as an excess substance to be discarded. Then, what happens with black holes that do not emit jets? They get gobbled up by larger black holes emitting jets. We can call black holes the collector machine for space energy. Large black holes expand and coalesce at a speed that cannot be reduced to 4 times. In galaxies, including the solar system, the energy inside the event horizon of black holes at the center exceeds 4 times the energy of other galaxies.

Also, let me make a statement about the collision of black holes of the same mass. Hereafter for the sake of simplicity, I assume that the mass of black holes to be the same, and that collisions take place quasi-statically. Before that, let me also make an assumption that the gravitational energy inside stars expands to black holes. If we have 2 objects of exactly the same materials, components, mass (M) and volume ($V_1 = 4/3\pi r^3$), and when they coalesce, and the volume of the coalesced object is ($V_2 = 4/3\pi R^3$), the radius of the object is R = $\sqrt[3]{2}$r.

Let me consider this with a planet like the earth, for simplicity, to obtain the internal gravitational energy of a star. Then, though it may seem too simplified, the size of the planet is outside my consideration, and is taken as a mere point. (m) in universal gravitation {$F = - G(Mm/r^2)$} is a mass at a certain point on the planet. If F_1 is the universal gravitation at a certain point,

$$F_1 = -G\frac{Mm}{r^2} \cdots\cdots (A)$$

It is thought that on planets like the earth the gravity is the strongest at the center, but since I am taking it as a point for simplicity, the center does not start at 0, but has a slight size of r = ε (gravity of the earth at its center is 0). This is because the propagation mechanism of gravity is not a point reflection at the center, but may bypass the center as if to avoid it (to avoid singularity), almost like drawing a loop. Gravity coming from the ground surface exchanges energy with the gravity coming from the opposite direction. Then each revolves 180 degrees, gains gravity at the center and returns to its initial state. This is precisely the quantum theory of gravity. I believe that there is an area governing gravity at the center of stars and planets, and that at the center gravity transforms as if through the Möbius strip. In other words, gravity from the ground surface goes back there as if it is a renewed force. That is, I imagine gravity exists as a force that is renewed every moment by going back and forth between the center of a star and its ground surface. Moreover, since it transforms like the Möbius strip, the gravity's past information gets updated each time. But with black holes, gravity information does not get updated, but is recorded in 2 dimensions. This is the holographic principle. Indeed, equations (3) and (4) are in the form of a linear fractional transformation. Gravity is generated only when it becomes a celestial body beyond a certain mass. Also, dusts of asteroids and Saturn are floating, and they are like a part of Saturn, pulled by gravity like the earth's atmosphere. Moreover, here the Mobius transformation applies. What makes the Möbius transformation through the Möbius strip becomes Klein bottle by pasting 2 Möbius strips together. If we express the length as a complex number in equation (*), we obtain a linear fractional transformation. But this does not mean we consider the actual length in the system of gravity generation, but rather its imaginary amount. This is because in obtaining energy from the center, adding each energy results in more energy than 2 energies, that is, in the real world, 1 + 1> 2 instead of 1 + 1 = 2, which is the opposite of mass defect. Generally, more results from 2 becoming 1 in terms of energy when calculated according to the general theory of relativity. This is due to the nature of this theory, and there is no geometric or general meaning in analyzing stars. This is further because the general theory of relativity holds only for short distances under an assumption that it breaks a conservation law. However, we will soon notice a contradiction in this. In other words, the assumption that a conservation law is broken in our system is ridiculous. I hope now that my readers will be convinced of how we may get results that are completely opposite of Dr. Hawking's. Is not this what he talks about when saying that in collision 2 black holes expand, i.e., the sum of each black hole's energy is greater before and not after the collision? In reality, though, it is the other way around…He says it expands because the theory of relativity breaks a conservation law, but I cannot comprehend it. In coalescence of ordinary black holes that are not of the enough size to emit jets, it is clear that the event horizon expands. In other words, the area of the event horizon after the coalescence is greater than the sum of the area of each event horizon is before the coalescence. What I am

presenting here is a holistic viewpoint, whereas Dr. Hawking's is about singularity at the center of black holes. So, when we position ourselves that way, our theories do match, and this is the specificity of gravity.

So, if we calculate the gravitational energy inside a planet, and represent it with E_1 with (M) a known, From equation (A)

$$E_1 = \int_\varepsilon^r F_1 dr = -G\left[-\frac{2Mm}{r}\right]_\varepsilon^r$$

When $\varepsilon \to 0$, infinity appears. However, here I am considering it as a mass point, so let us ignore it (without considering the correction term of pf integral). Further let us decide to leave it to superstring theory of the future to make the actual calculation (since superstring theory is abundant with information, as physics),

$$E_1 = G\frac{2Mm}{r} \cdots\cdots (a)$$

where E_1 is derived, and the volume of the planet is exactly twice as much. Similarly,

$$F_2 = -G\frac{Mm}{R^2} \cdots\cdots (B)$$

If the gravitational energy inside the planet is E_2,

$$E_2 = \int_\varepsilon^R F_2 dR = -G\left[-\frac{4Mm}{R}\right]_\varepsilon^R$$

(since mass is twice)
We obtain

$$E_2 = \frac{4GMm}{\sqrt[3]{2}r} \cdots\cdots (b)$$

(The reason I have classified this as a mass point is because the current quantum theory of gravity corrects Newtonian mechanics)

Here, $R = \sqrt[3]{2}r$ is used because the radius is such for when the volume is twice. Therefore, from equations (a) and (b), we get

$$E_2 = 2^{\frac{2}{3}} \cdot E_1$$

Let me now consider the coalescence of 2 black holes of the same size and the same mass. Then, if E_2 represents the energy within the event horizon of the black hole born after coalescence, it becomes appropriate that it unexpectedly shrinks without becoming twice as large.

In fact, the mass of a black hole decreases by about 10% from collision {pages 202-203 of «The Astronomy Cafe: The Best 365 Questions and Answers from «Ask the Astronomer»» (Japanese translation) published by Kodansha Bluebacks}. Then, we cannot but conclude that the event horizon shrinks from an increase in entropy. However, perhaps it is more natural to conclude that a black hole temporarily expands by a calculation on the basis of the general theory of relativity, the entropy goes down and then the black hole gobbles up stars nearby, and after a while, entropy increases and decreases, finally shrinking. In other words,

a black hole may repeat increasing and decreasing from an entropy point of view. But, whether it is a method by Newton or from the general theory of relativity, it is difficult to think that the nature of gravity dramatically changes. It is a fact the general theory of relativity is too mathematical, and at times its expressions are far-fetched. Thus I think it is safe to conclude that the increase in the scale of the event horizon is not so much. Instead, the scale (gravity area) of entropy and gravity within the event horizon grows large. In other words, it is difficult to think that the nature of black holes changes. In fact, the increase in the event horizon is probably rarely seen.

Since the energy outside the event horizon does not change, when there is a collision of black holes of the same scale, same mass and with their original energy outside the event horizon not emitting jets of more than $2^{5/3}*E_1$, though perhaps a rough estimate, the black hole born from the coalescence clearly makes a jet (In fact it is necessary to integrate and correct pf). This is because the law of conservation of energy must be satisfied. So, if (S) represents the entropy and (A) the area of the event horizon in the Bekenstein-Hawking formula, we obtain $S = 1/4\ A$, with the entropy increasing for sure.

So why is it not solid but a plane? In general, in (n) dimensions, these (n) dimensions can be described only in (n-1) or lesser dimensions. So, describing 3 dimensions in 2 or less dimensions is a matter of course. This is the holographic theory which stipulates that the 3-dimensional information of a black hole is accumulated as a 2-dimensional holography. Indeed, galaxies are 2-dimensional. Also, jets are emitted in the vertical direction without getting affected by black holes. Therefore, Figure 3 can be said to illustrate the mechanism for generating black hole jets.

But this is a very small estimate, and I think it would actually shrink more because the energy inside the event horizon is that powerful. The satellite galaxy of our galaxy (Milky Way Galaxy) seems to have all the necessary conditions for this. I say so because the center of most galaxies is a black hole (see pages 137 - 139 in «Mysteries of Quasar» published by Kodansha Bluebacks). Note that the pf integral is explained in detail in Isao Imai's «Applied Generalized Function I & II» published by Saiensu-sha Co., Ltd. I would be honored if I am making contributions to future researches on black holes.

In addition, the system of Figure 3 may become a dynamic model of the Higgs mechanism providing weight. In other words, it is a relationship where planes and particles interact. It seems that dynamic causes for spontaneous symmetry breaking in the Higgs mechanism are those such as Figure 3.

The ultimate goal is successes with super symmetry theory and the completion of the unified theory (GUT).

<Important Notes>

My statements here are geometry, not theory. However, on energy I do have something to say against the general theory of relativity. I think the law of conservation of energy is one of the most powerful laws in the world. Why does the theory of relativity break it? I mean, how come does the law of conservation of energy get broken, as soon as the theory of relativity (electroweak unification) is introduced? Is it not because of this that quantum mechanics and the theory of relativity are not compatible? Therefore, It is desirable to establish a relativity to satisfy the law of conservation of energy. Some say that the general theory of relativity is flawed. The theory of relativity exists by breaking a conservation law. Would it be too much to say that one can lose by pursuing the theory of relativity with earnest? There is no doubt that one of the mistakes is this. At the same time, it is also true that the theory of relativity has made great contributions to space observation. What does it mean that the theory of relativity does not affect phenomena in the physical plane, despite the theory's theoretical flaws? In other words, should we not call it a phenomenological theory?

Also, the energy inside a star can be derived up to its potential in terms of the general theory of relativity, but since its gravity is not quantized, it cannot be integrated. Therefore, the interior gravitational energy of stars cannot be determined by this method. Since the quantum theory of gravity is originally a theory that takes size into consideration, it is thought that superstring theory applies. However, there is room for reconsideration with the current the quantum theory of gravity.

6. Final Words

In elementary particle physics, weak interactions and other phenomena cause a conservation law to break. But when 2 objects with the same mass show the same phenomenon as when 2 objects of different masses collide, symmetry in a broad sense is preserved.

That is, since $E_1 - E_3 = E_2 - \Delta E$, the symmetry is preserved in a broad sense (BPS State), and (left side) cause = (right side) result. Because conservation lwo is holded against not the object but the system.Also, it can be concluded that energy can be extracted by setting a state in Figure 3 where the phase is appropriately manipulated. The power generation part of Figure 3 shows the state of broken symmetry and that the universe began with the Big Bang.

Although a conservation law breaks with neutrinos gaining mass and it seems like the conservation law breaks, that is just on the surface, and thinking of the power generation part of Figure 3 in absorbing energy due to the neutrino oscillation, the energy does get absorbed and converted into mass, thereby, overall, retaining the energy.

A conservation law seemingly breaking down means seemingly getting energy and concerns resonance conditions of the energy. This can also be seen with electrons when ions with bound electrons pass through crystal, and resonance excitation of nuclei (Okorokov effect), etc. At this point, I would like to ask what reality is. That is neutrino masses.

Also, I would like to ponder upon the observation of the current proton decay. From its current method (such as Super-Kamiokande), it is generally thought that the current proton collapse cannot be observed. This is because we are trying to observe the lifetime of proton collapse that is longer than the lifetime of the universe, without any operation.

Also, statistical ambiguity cannot be explained. Statistical ambiguity is illustrated in saying that it is good enough for one proton to collapse per year on average, which could well mean that 100 protons could collapse all at once 100 years from now on. This means we will have to wait for 100 years. It does not seem like a problem that can be solved when the scale is multiplied by 10. The possibility of confirming proton collapses in these few years is close to none with the currently available means. Perhaps we can observe it by increasing the scale and precision of currently available equipment by innumerable fold, but are we not rushing into a conclusion by saying that the lifetime of protons (10^{32} years) is many times more of that in our time, given that it has been calculated with a statistical precision? There are books with titles that say quantum statistics, but there is nothing that actually handles statistics in terms of quantum mechanics.

Figure 3 merely makes a use of it, i.e., power is generated by using the mechanism where neutrino masses are gained from the weak interaction. Therefore it would never come to breaking the law of conservation of energy. In other words, without breaking a conservation law (though it is allowed to break it within the realm of uncertainty), it merely reproduces what happens within the realm of natural phenomena. Science has evolved by imitating or applying the nature's mechanisms. I believe validity holds in that sense. Hence, it can also be concluded that Figure 3 satisfies the Noether's theorem as well. Then, the vibration of the bar can be considered to fit into Noether current.

This is because neutrino masses can be obtained from the weak interaction only by retaining both the law of conservation of energy and the law of momentum conservation. I must emphasize the significance of this. Conversely, in β decay of substances represented by the weak interaction, the weak interaction retains energy by these substances releasing β rays. The weak interaction consumes a star's fuel.

In addition, it is questionable whether a conservation law holds even with the phenomenon of gravity. If it does, gravity can be renormalized and thus does not emit anything, which makes it possible to quantize gravity.

Given the revolution of the earth, it is more appropriate to say that every moment the earth is constantly breaking a conservation law in order not to fall, rather than falling toward the sun constantly.

In other words, the total amount of gravitational energy of the earth should be greater than the total potential gravity needed in orbiting and rotating the satellite (the moon). In conclusion, a star has more gravitational energy than it needs for orbiting.

That is, the speed of the earth's orbiting is the synthesis of vectors of the universal gravitational force of the sun working downward on the tangential velocity (Hodograph) of the orbit of the earth and its perpendicular component. But I would think that the energy is not retained since the sun's universal gravitational force is working downward on the perpendicular component, and the earth system receives external power, if it was only Hodograph's motion energy as the earth system.

Therefore, I expect that gravity interaction does not have properties of conservation. As for the interaction, the common theory states that the phenomenon of the gravity itself breaks a conservation law, but since this is beyond the scope of this thesis, I will not comment on it.

In other words, gravity is a non-linear phenomenon. Just as in the weak interaction the law of conservation of energy collapses due to quantum anomaly, gravitational force loses its properties of conservation due to gravity anomalies. However, whereas the former holds linearity, the latter is nonlinear, and this is the big difference between them.

The former also satisfies the law of conservation of energy.

A star is thought to have its own gravity system and a remote action system, but the energy of the remote action system is also thought to have gravitational energy that is greater than the energy for orbiting. In addition, since it itself rotates, that needs to be taken into consideration as well. This is the energy derived from the angular momentum of rotation. However, since it moves only in a certain direction, the second quantization (quantization of direction) is not conducted, as in quantum mechanics.

In addition, Figure 3 can be used for accelerating expansion of the universe, and when it is, some phenomena are required in the extra dimension in order to satisfy a conservation law.

It can be said that in reality it is used to round 6 dimensions of the 10-dimensional universe at this stage.

By applying Figure 3 to the earth's gravity, E_1 is its own gravitational energy required to maintain its shape, E_2 is the surplus gravitational energy for revolution and remote action, and E_3 is the gravitational energy of its own rotation. Furthermore, the remote action system is considered to have gravitational energy greater than E_2. This is the reason gravity breaks a conservation law. I do not know its mechanism. I would think that E_1 is a gravitational generation system which produces E_2, but E_1 independently creates gravitational energy beyond it (more than integration of universal gravitation of each atom or particle constituting the earth). Actually, I think it does not create it. This is why it is said that at the center of the earth there is a part that governs it. But even if gravity was quantized, would we really find out that much? Moreover, is it not because of this that we need an analysis separately from the quantization of gravity? What I am talking about is only real phenomena that take place, such as meteorite falling to the earth. Therefore, perhaps unless the problem of singularity is solved, the quantum theory of gravity cannot be completed. What I mean is that if gravity is attributed to a substance, there will always be singularity, and from a standpoint that is not so, i.e., from a standpoint of only the remote action system, gravity can determine the range of no conservation. From that, it becomes necessary to try one gravitational phenomenon by fusing focal and general positions. In the quantum theory of gravity, singularity exists as an inevitable problem. If the equation of the general theory of relativity contained singularity and was improved or changed into an equation that satisfies a conservation law, Pf integration would become possible and gravity quantized.

A heavenly body with gravity always has singularity at its center of mass. Gravity can be called a physical phenomenon in which virtuality and entity coexist. The system of our interest satisfies a conservation law, but the system in its entirety breaks it. It may be more simple to say that, for example, the solar system in its entirety satisfies a conservation law, but the sun itself does not.

If I assume that black holes themselves are singularity, the center of planets like the earth may have singularity, but can we not approximate it in the same way as if it does not have one? If we can, it becomes necessary to classify the heavenly body by gravity.

On the face of the earth, that is, on the side facing the sun (daytime), gravity greater than the earth's own energy is needed in the interaction part of Figure 3, and it is applied. On the other side of the earth, i.e., night time, only the earth's own energy is necessary, and thus in Figure 3 it is only necessary to consider the falling of the ball. In other words, it is proven that Figure 3 utilizes the gravity system to generate power. However, since there is the moon on the backside (night), it is not really only own energy. Therefore, in order to correct this, it is necessary to consider a complex domain such as an AC power source governing gravity. This is clear by looking at the dimensions of equation ⓪. Here is what differentiates gravity from the other 3 forces. In other words, the source of energy for the force is not clear. With black holes, it will be further quantized and become singularity.

7. Future Outlook

1. In the future, as a countermeasure of global warming, power generation using petroleum and coal as raw material will be impossible. We will then need to manufacture products with non-petroleum properties and without environmental pollution, and recycle them, but that will require large power. This will in turn need independent energy that does not cause pollution. The objective of this thesis is to show how to produce energy from vibration, how to manipulate such vibration, and how to obtain energy.

2. Gas will no longer be used in the future, either, and the field of gas will become specialized. As an alternative, we will use solar heat for hot water supply. Industrial products will use components of "algae" as a raw material, not petroleum. Power generation will also be necessary in producing the substances made with the "algae" components. These components will be grown on the rooftops in cities, but cities will also need to function as forests.

3. Restrictions on the importation of harmful materials and resources will become inevitable, and demand for electricity will become higher than ever in pursuit of a recycling-oriented society, that is, a recycling society.

4. Neutrino masses are hardly impacted by gravity. However, it is also a fact that there is mass. In order to explain the weak interaction, it is necessary to know more about the nature of gravity. If the energy of the neutrino oscillation, which is the electric action, is known, solving the simultaneous equation of the difference of the squared neutrino masses and the equation (*) from the Higgs mechanism (described later) and Figure 1 and Figure 3:

$$(\Delta m)^2 = (Xm)^2 - m^2 \cdots\cdots ⑨$$

$$\Delta E = \frac{1}{2}mc^2 \frac{4X(X-1)}{(X+1)^2} \quad \cdots\cdots ⑩$$

From ΔE collision with $W^{\pm}$, Z^0 Boson particles result in neutrino masses becoming heavier. Where v is the difference in squared neutrino masses $(\Delta m)^2$ at the speed of light (c) and energy of the neutrino oscillation (ΔE), since Δm and ΔE are constants, simultaneous equations are to be solved to obtain (X) and neutrino masses (m). Since neutrinos exist to make the energy spectrum of electrons continuous, we can conduct a direct calculation by using the conversion equation (*). Then, when solving equations ⑨ and ⑩ for (X) and (m), (m) results in solving the following 6th degree polynomial.

$$: m^6c^8 + 8c^6(\Delta E)m^5 + c^4m^4\{16c^4 - c^4(\Delta m)^2 - 32(\Delta E)$$
$$c^2\} + 8m^3c^6\{4c^2(\Delta m)^2 - (\Delta m)^2(\Delta E)\} + 16m^2c^4\{c^4(\Delta m)^4 - (\Delta m)^2(\Delta E) - c^2(\Delta E)(\Delta m)^2 - (\Delta m)^2(\Delta E)^2\}$$
$$-16mc^6(\Delta E)(\Delta m)^4 + 4c^4(\Delta E)^2(\Delta m)^4 = 0 \cdots ⑪$$

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Equation ⑪ can be easily solved with a calculator. Since electrons have electric charges, it is possible to calculate their mass by calculating the spectrum of energy, but because neutrinos do not have electric charges, an energy conversion formula due to weak interaction is necessary. We must know the exact, not approximate, neutrino masses, which are the basic unit of matter, by using the energy conversion formula (*). This is because it is a candidate for dark matter. Here it becomes necessary to rethink calling neutrino masses stationary mass. If we want to make corrections, in the equation for the theory of relativity:

$$\frac{m}{xm} = \sqrt{1-a^2}$$

(where α is the ratio of the neutrino flight speed to the light speed) ... ⑫

Where C → α c , it is enough to solve the 3 simultaneous equations by adding the equation ⑫ to the simultaneous equations ⑨ and ⑩. Moreover, if (m) stands for stationary mass, since the relativeness of the mass is defined in motion as described in «4. Observations» even if neutrino masses are provisionally determined as the stationary mass, its meaning remains questionable. Considering that neutrinos are almost always flying at the light speed (sub light speed), this correction itself becomes doubtful because mass relativity has already been discussed. The problem of collision is a necessary means for determining the mass. According to the theory of relativity, mass gets heavier as the speed approaches that of light. But neutrinos are so light that they cannot go hand in hand with high flight speed. Also, the mass being too small leading to flying fast and neutrinos becoming heavy and slow due to the neutrino oscillation results in contradicting the theory of relativity, i.e., becoming faster does not make it heavier. There we face a problem. Why do we keep classical ideas only when it comes to neutrino masses?

In addition, when calculating ⑨,⑩,⑫ while taking into account the actual relativistic effects,

$m^8\{16(\Delta m)^4c^4+4(\Delta E)^2+16(\Delta m)^2(\Delta E)^2c^2\}-8m^7(\Delta m)(\Delta E)c\{4(\Delta m)^2c^2+2(\Delta E)^2-4(\Delta m)^2(\Delta E)^2\}+m^6\{32(\Delta m)^6c^4+8(\Delta m)^2(\Delta E)^2+32(\Delta m)^4(\Delta E)^2c^2-4\}-64m^5(\Delta m)^5(\Delta E)c^3+m^4\{16(\Delta m)(\Delta E)c+16(\Delta m)^8c^4+4(\Delta m)^4(\Delta E)^2+16(\Delta m)^6(\Delta E)^2c^2-8(\Delta m)^2\}-8m^3(\Delta m)^5(\Delta E)c\{4(\Delta m)^2c^2+2(\Delta E)^2\}+m^2\{32(\Delta m)^3(\Delta E)c-5(\Delta m)^4\}+16(\Delta m)^5(\Delta E)c-(\Delta m)^6=0$ ・・・⑪'

Upon solving ⑪',and neutrino mass is identified.But neutrino mass is poor accuracy now.

Ichiseki says value of ΔE in Housou University text.

This is solved.

μ Neutorino mass;

$m_μ=$ [eV]

τ Neutorino mass;

$m_τ=$ [eV]

τ Neutorino velocity:

$$c_0 \risingdotseq$$

$$[m/s]$$

When considering gravity two-dimensionally, it is a Mobius strip. However, because it is three-dimensional, it is a Klein bottle. If that is the case, graviton cannot exist individually, but it is always paired like a dipole. It becomes not a plus or minus in electrical terms, but a plus or minus for a unit of weight. By multiplying plus and minus, the minus on the right side of Newton's universal gravitation equation can be proven.

What Dirac said that minus energy is needed is proven,that is,minus mass is not getting energy but giving energy.And minus mass is made.

There is complex domain in the core of earth for saving the conservation law.

This is why, it is said that the moon is falling toward Earth at the moment, but it can be also said that in order not to fall, it is repelling.

So gravity has also been linked as a power of matter (fractional linear transformation), which means that gravity as interaction with self-gravity can be separated, the Hamiltonian can be defined, and a framework for quantization of gravity has been created.

Since the Waterfall by M. C. Escher completely embeds the 3rd dimension into the 2nd dimension, it can break the law of conservation. Gravity is embedded in the 3rd dimension, so it does not violate the law of conservation.

You can also say, quoting Perelman's idea, those who have traveled through space will always return back to where they started.

From another point of view, If there is a super space, and we think that this universe embeds the 10th dimension into the 3rd dimension, it cannot be observed, so the law of conservation is protected.

Since my invention (machine) only converts social parameters, it does not affect the social structure or the status of workers.

The actual measured value of light cannot be completely determined because we must consider the true vacuum, but light exchanges energy, so it appears to have mass. Such is the case with gravitational lenses.

For photon → neutrino transformation, that is, the beta decay, a star cannot form itself because photon energy is too strong. We think it dies as light and become neutrinos. At first glance, it looks like a mass gap, but the conservation law is respected. In other words, it is balanced by neutrino releasing energy. In this universe, photons are the only solitary elementary particles that are the source of beautifully shining light with zero mass, one spin, and only electromagnetic energy. Will they do some kind of conversion afterward? I digress, but when I quit college, I betrayed my teacher, but I believe that this was the moment where the writer Muneo Matsunaga was born.

Perhaps photons are the elementary particles of energy, and neutrinos are the elementary particles of matter? When theorizing that the photon's electromagnetic energy is replaced by neutrino mass, the speed of the photon cannot be exceeded by the uncertainty principle. Light is a signal and the speed of neutrinos is due to the movement of matter. When the photon energy becomes the kinetic energy of the neutrino, it can be said that the neutrino is flying at the same speed as the speed of light, but due to the uncertainty principle, it becomes sub-light speed.

If we consider gravity as a signal that travels through space, it travels at the speed of light. Gravitons have zero mass. We will think of gravity waves as composite particles. This is because gravitons are scalar particles. In terms of light, it is white when various colors are mixed, and there is no color, or so-called white. Gravitons are a particle that transmits power while having zero mass.

When light travels through matter, it exchanges energy, so it behaves like it has mass. Here, the gravitational energy is the energy that distorts space, so in the gravitational lens, the gravitational energy and the photons exchange energy. With the energy that distorts space….

Gravity distorts space. In relativity, space is matter. Light will exercise through space as though it has mass. According to Lisa Randall, gravity can also travel in super space. In this case, gravity will be the fastest speed. Light exchanges energy, so in a fake universe, there is no place where gravity is unattainable, so wouldn't it be fine for the exact value of light speed to be cesium oscillation?

Light is not matter. The fastest of matter are neutrinos. The fastest of elementary particles are gravitons. Will relativity not hold for neutrinos? If it holds, photon → neutrino transformation!!! From the neutrino oscillation, it seems to lead to the conclusion that the heavier the neutrino will be, the slower the speed, but will neutrino speed be the same as the speed of light?

Of course, this is not the case, and photons are considered to have zero mass and only energy. And neutrinos are the elementary particles of the source of mass, and are not electromagnetic energy like photons, but substantial value of neutral mass. Relativity holds here as well. Contraposition!!!

The so-called relativistic particles defined in motion. However, what we want is a static mass. From relativity, because neutrinos get heavier as the generations get older, they become faster. It means that gravity is the speed that best matches the definition and the measured value.

Photons cannot achieve the exact definition, theoretically exactly. In addition, the speed of neutrinos cannot be measured in principle. Neutrino mass can be realized as the current prototype kilogram.

I digress, but gasoline cars are not energy efficient. There is complex domain in the core of earth. It is Noether's theorem

5. Light does not have mass, but has energy. So, why can light be bent by gravity? Without energy, there is no force or gravity. Therefore, it becomes necessary to know and clarify the relation between electromagnetic interaction of light and energy of gravity (Refer to «Appendix: On the Higgs Mechanism» for more). Photons behave as though they have mass when moving through matter. That is, this questions the weight conversion of electromagnetic interaction. A series of descriptions is merely utilizing gravity as an energy source for power generation, but energy does not need to be gravity in a mechanism for acquiring mass. This is because we need not only gravity to gain mass. It can be the weak interaction. The machines in Figure 2 or Figure 3 can be handled similarly in an inertial system. In particular, I would like to emphasize that the machine in Figure 3 represents a weak interaction mechanism.

6. Where a conservation law may be broken in the weak interaction, the above thesis can be thought of as a concept complementing this, but accompanying logic is necessary.

7. I made the seesaw asymmetric to simulate symmetry breaking. It is a virtual operation which is a fundamental operation of elementary particle physics. I would like to also point out that in the Higgs mechanism, this corresponds to the vacuum condensing and breaking the symmetry. It is similar to taking a gauge to deal with phenomena in quantum mechanics.

Appendix: On the Higgs Mechanism

The Higgs mechanism is a mechanism that provides weight.
Though its structure is known, its mechanical model is not clear.
The following is an explanation on by what kind of mechanism substances gain weight.
«I. Power Generation with Stars' Gravity System» is a mechanical cause, that is, a model which breaks the symmetry in the Higgs mechanism.
Shortly put, I am referring to Figure 3.
In the second edition, I had stated that there was no such thing as the Higgs particles, and at this point I would like to make it clear that statement was a mistake.
In other words, it can be said that the Higgs particles are generated by the energy that the space distorts to protect a conservation law.
This is consistent with the generation of the Higgs particles at the creation of universe in accordance with a standard theory.
So where does $W^{\pm}$, Z^0 Boson obtain energy in a collision with the Higgs particles?
In an extra dimension.
It is commonly said that the Higgs particles are generated from nothing, but I believe they are generated in the extra dimension.
The extra dimension is a concept conceived to protect a conservation law, and is also related to a unified theory, which is natural in unification of forces.
It is also indispensable to protect a conservation law.
Newton Dynamics is the latest picture of the Higgs mechanism.
In providing weight, it is called an inertia coefficient in Newtonian equation of motion, but it is merely a coefficient and does not directly provide weight.
Therefore, Newtonian mechanics cannot be a weight imparting picture.
I think that I have provided a picture of this.
Why does such thinking so traditional in regard to provision of weight, i.e., receiving resistance from the Higgs particles, apply here?

Past pictures were as though a popular individual cannot move forward when surrounded by his/her fans, but here it is more like this individual repeatedly collides with the fans, thereby unable to move forward.

It is the same thing to add up individual collisions, thus calling it one collision.

Elementary particles gain mass by exchanging energy with the Higgs particles.

I think this is also meaningful for the Higgs mechanism's own interaction.

In addition, I believe Figure 3 is also a structure giving an expected value of vacuum as a whole, that is, a visualized representation of linear expressions.

Therefore, equation (*) suggests a linear dependency as an energy conversion equation.

The nature prefers linearity.

As can be seen in Figure 2, even if collisions (transformations) take place, physics (from State 1 to State 2) do not change.

This applies to Figure 3 as well.

Therefore, I believe I have presented a new interaction in the Higgs mechanism which provides weight.

In any case, in superstring theory, a theory on D-brane providing collision, and I believe I have bridged these two.

Practically speaking, in the brane cosmology, it is known that inflation occurs when the D-brane collides, and thus from equation (*) in the collision, the energy of the cosmos does not exceed 4 times.

So, the size, or more precisely, scale of the D-brane can be said to be determined to some extent.

That is, the D-brane category is an established one.

Since mass and energy are equivalent (Figure 3) energy difference arises, making this a mechanism that provides mass, i.e., weight.

The Higgs field condenses, the symmetry of the electroweak interaction breaks voluntarily, providing mass of particles such as electrons, but this condensation is like superconductivity.

Superconductivity is solidified phase.

However, what is greatly different from physical systems is that relative motion cannot be detected in regard to the condensed Higgs field.

But I consider this to be an idea that was conceived to resolve this fact, such as Figure 3 in the sense that humans acquire phase.

As to the fact that it is unknown how to embed a degree of freedom, since in superstring theory a string with a certain size is the base, by embedding dimension (X) of the length, the absorption part in E_2 is demonstrated, and mass is acquired.

Superstring theory originally took size into consideration.

It is the weak interaction that provides weight to elementary particles, but energy conservation is broken and angular momentum is not conserved, either.

Therefore, since the former is $\Delta E + E_1 = E_2 + E_3$, symmetry in the broad sense is preserved.

This is shown in equation (2) of chapter I.

For the latter, I think it satisfies the embedding of spins required by superstring theory, and this is shown in equation (1) of chapter I.

Is it possible to quantize angular momentum for stars and planets as well?

The answer is no.

That is, it can be said that the feedback part in Figure 3 is broken by spontaneous symmetry, and the power generation part is absorption.

The fact that the feedback part corresponds to the phenomenon of spontaneous symmetry breaking also means that the feedback part needs to be ($E_1 - E_3 > 0$) for Figure 3 to hold, and thus the power generation part provides weight.

It can be said that the feedback part is responsible for spontaneous symmetry breaking.

In other words, it seems inevitable that the feedback part also has to be asymmetric.

In reality, it is the power generation part that can be called the space symmetry is spontaneously broken.

Furthermore, in equation (*), it was shown that if the bars are slightly off than 1:1, the mechanism of this equation is created and applies in terms of the Big Bang as the beginning of the universe.

This is truly educational.

Mass is obtained by absorption, but I believe I have justified that the power generation part corresponds to the field generating energy.

With this, I have solved the problem of hierarchy.

By the way, Figure 3 may be related to the Yang-Mills theory, which is an unsolved mathematical problem.

When we consider that the elements constituting the bar in Figure 1 are subdivided and form an infinite number of harmonic oscillators, i.e., constituting one field, it can be thought that field interaction has taken

place from the power generation part in Figure 3 from collision. The entire Figure 3 can be also considered as a mechanism that satisfies the gauge symmetry.

That is, gauge symmetry is broken, but gets restored.

I would like to repeat: Symmetry gets restored.

This is also consistent with the Higgs mechanism.

Therefore, since the relation of the phase becomes the invariant with respect to the transformation, I would be glad if I have helped clarify the breaking of the gauge symmetry in the weak interaction.

The same operation as quantizing the path integral can be thought to take place in Figure 3 in order to derive energy due to the ambiguity of (X).

In other words, it renormalizes mass.

In order to determine the mass of electrons, since they have electric charges, renormalization of mass is not necessary, but to obtain neutrino masses, it becomes necessary.

But in terms of mass, both electrons and neutrinos are the same.

Light is also electromagnetic waves, i.e., an electromagnetic phenomenon.

In other words, its behavior can be tracked with quantum electrodynamics (Q. E. D.).

It is true that if the phase on the left side of the upper bar in Figure 3 is θ_1, the angle on the right side θ_2 and the phase on the right side of the lower bar θ_3, the angle on the left side θ_4, since the size is ignored for now,

From

$$\theta_1 : \theta_2 = \theta_3 : \theta_4$$

$$\theta_1 \theta_4 = \theta_2 \theta_3 \cdots\cdots ⑬$$

Here, since

$$\theta_3 = -\theta_1, \quad \theta_2 = \theta_4$$

Equation 13 becomes

$$\theta_1 \theta_2 = -\theta_2 \theta_1$$

and satisfies the Grassmann variable calculus:

$$\theta_i \theta_j = -\theta_j \theta_i$$

In the language of superstring theory, it is genus 3.

Grassmann variables are used for path integration of a fermionic field.

Indeed, neutrinos are fermionic, and in the topology of superstring theory, they correspond to the Fuchs group.

Figure 3 describes the Möbius transformation.

This is because the mass is hidden in the gauge invariance, as seen in my fourth future outlook in chapter I.

The conservation law with elementary particles is gauge invariance.

As I wrote in «I. Before Power Generation,» the dimension of the machine in Figure 3 is derived by dividing energy by time.

In terms of the meaning of the dimension of the Planck's constant, it is derived by multiplying time and action.

Therefore, from dimension analysis, if (T) is time, even if (T) is replaced with (1 / T), the dynamical invariance is preserved, relating to time in terms of quantum mechanics.

In quantum mechanics, energy and angular frequency can be exchanged as being the same.

Therefore, the generation mechanism of the virtual photon has been demonstrated.

That is, in equations (1) and (2), in physics, this phenomenon is virtual and (X) is just a coefficient in the equations without dimensionless quantity.

Rather, dimensions do not need to be considered since equations (1) and (2) are simple simultaneous equations and not mechanical ones.

This means that the uncertainty principle requirements are satisfied since the time taken for one cycle gets shortened when E_1 increases in Figure 3.

In addition, from this, it can be considered that the interaction of the global (the entire heavenly body) gravity due to the interaction of gravity of microscopic constituent substances in the heavenly body is also similar.

Thus, I have illustrated my observations.

As described in the subsequent sections of this book, while quantization of gravity is impossible with existing conventional methods, and in superstring theory gravity can be quantized without inconsistency.

But, as aforementioned, explaining gravity in a way similar to renormalization makes it possible to quantize gravity.

I look forward to future developments of superstring theory.

In other words, providing weight even in gravity means that the target object (heavenly body; sphere) is too large for the event (see appendix), so there is too much difference in scale between that of gravity and of the Weinberg-Salam theory.

Quantum mechanics is quantum mechanics, and the theory of relativity is also the theory of relativity.

While the general theory of relativity is effective for short distance forces, it cannot explain long distance forces.

Just as the weak interaction which is an electromagnetic force and short distance force has been unified under the Weinberg-Salam theory, I am dreaming of the day in the near future when quantum mechanics (electromagnetic force & weak / strong force) and the theory of relativity (gravity) are unified under superstring theory.

In that sense, it becomes sensible to attempt this unification in the relationship between gravity, which is a long distance force, and strong / weak force, which is a short distance force.

This is because both work on all particles, i.e., gravity is like a part of the strong / weak interaction.

In fact, graviton is thought to be from Boson.

Therefore, I think that supersymmetry requirement of maintaining symmetry is met with respect to the exchange of Fermion and Boson.

Not being able to take out the quark represented by a strong force alone is similar to not being able to take out the N-pole and S-pole of the magnetic field alone.

And if a picture of the stronger interaction or a picture of the relationship between an electromagnetic interaction and the weak interaction can be drawn, the unified theory under superstring theory will succeed.

This means that the confinement phase and the Higgs phase of the quark in quantum mechanics are related, so let me try to explain this using my model.

The feedback part, i.e., equation ⑧ is responsible for the energy required for the quark confinement, and the power generation part, i.e., equation (*) is responsible for the energy released at that time.

There is also the Higgs mechanism of the strong interaction.

Since the charge (mass) that causes the quark confinement is known, I think it is possible to derive how hard the quark is tied (the value of the energy at which the quark, which is tied by a gluon, breaks off) by the Parton jet, from the energy after subtracting the impact energy.

In other words, since the charge (mass) that causes the quark confinement is known, I think it is possible to derive how hard the quark is tied (the value of the energy at which the quark, which is tied by a gluon, breaks off) by the Parton jet, from the energy after subtracting the impact energy.

That is, there is also the Higgs mechanism of the strong interaction.

Therefore, it can be said that it is a new picture of the strong interaction.

I am convinced that Figure 2 precisely shows asymptotic freedom in the strong interaction (QCD).

I also think that when a small distance, that is, (X), becomes smaller, asymptotic freedom shows, and when a long distance, that is, (X) increases, confinement of quark takes place.

It can be said that with this we have entered the initial stage of the unified theory, including gravity.

Also, since this model can contain gravity, I declare here that the framework of super symmetry is now complete.

The reason is that in super symmetry, particles bonded by super symmetry simply must be of the same mass.

Here, the invariant in the transformation is a phase relation.

The aforementioned indicates necessary and sufficient conditions for explaining the validity of the machine in Figure 3.

It is phase invariant.

Therefore, AdS / CFT correspondence in superstring theory may be correct, but cannot be said to be complete.

In the future, when a theory is built so that the theory of relativity satisfies a conservation law in AdS / CFT, it will become possible to renormalize the theory of relativity, and quantum mechanics and the theory of relativity will be unified.

There have been attempts to unify electromagnetic interaction and gravity, both of which are long distance forces.

But if we see that they are common in that they both provide mass according to the Weinberg-Salam theory, unification of the weak interaction (short distance forces) and gravity (long distance forces) may become one of the most influential forces.

In other words, although space electromagnetism is said to possess information rich with content in black holes, I do not think so.

Black holes are important from the standpoint of quantum mechanics.

Earlier I wrote that the bar in Figure seemingly had a size, but in reality, when neutrino masses are considered to be obtained from the Higgs mechanism by the weak interaction, the bar does not become smaller than the Planck length ($1.1616199 \times 10^{-35}$[m]) to obtain torque.

Otherwise, obviously, our observations would face problems.

When applying this to the strong interaction, (X) is small, but does not become 0 and can possess a bit of energy.

That is, since $E_3 > 0$ from equation ⑤ in chapter I, it can be regarded as zero point vibration in the low energy state. When the machine in Figure 3 is stopped, it can be said that both the weak and strong interactions are in a low energy state, and when the machine is in operation, the forces are interacting with each other.

After all, scientific problems we currently face in various fields are due to the collision theory, be it with the strong / weak interactions, superstring theory or unified theories.

I think that the D-brane will eventually become one due to the surplus-dimensional pressure (surplus dimension energy), attempting to become one from collision energy.

Neutrinos obtain masses by collision with $W^{\pm}$, Z^0 Boson, and I think that a conversion formula for the collision energy becomes necessary.

II. On The Uncertainty Principle

Information does not get transmitted faster than the speed of light, and this is causality.

In teleportation, phase may exceed the speed of light, but in physics the target event needs to be observed, and hence the uncertainty principle occurs.

Therefore, by considering phase separately, or should I say, independently, I decided to take an advantage of the uncertainty principle, and this effort resulted in my power generation system.

In current physics, it may be too much to say the phase shift is manipulated, but if I dare say it, the power generation system can be controlled by manipulating the phase.

At the same time, manipulating the phase mimics the quantum entanglement effect seen in the optical phenomena.

With waves, it can be said that while group velocity does not break causality, but phase velocity can.

Is quantum cryptography not taking advantage of this phase velocity?

Smmerfeld proved that group velocity and phase velocity of light are the same according to the theory of relativity.

Moreover, Brillouin proved that the main part of the signal always propagates at the group velocity if it is separated by absorption regions.

Here the separation by absorption regions is given as a mere assumption, but in my opinion, that is precisely what is important.

This is because if E_1 occurs in Figure 3, E_2 and E_3 are also determined.

I'd like to call this a switching technology, enabled by using the uncertainty principle well.

Therefore, I believe that it does not break the uncertainty principle.

In addition, it can be said that the organization of the entire machine utilizes the self-organization phenomenon created by the non-linearity of the system.

By the way, when the gravity is strong, it seems that living things grow more, but this is because E_1 increases in equation (*), and the energy needed for the growth increases.

Also, due to the permanent dipole of the water, Brownian motion gains thermal energy from the surroundings and converts it to motion energy, and this is the phenomenon created with the method in Figure 3.

The STAP cell problem ignores this mechanism of self-organization altogether, which is totally ridiculous, as I think.

It also breaks a conservation law.

At the same time, it is true that newt hands regenerate.

So, it needs to be clarified how the STAP cell problem breaks a conservation law, and we need to build a theory that holds true even then.

The theory of relativity holds even if it breaks a conservation law because it clears that.

I did not say that the theory of relativity had nothing to do with quantum mechanics.

The Lorentz coefficient of special relativity is derived from the gauge transformation of quantized electromagnetism (to be exact, an electromagnetic field).

Then it would be lying to say that it has nothing to do with iPS cells.

That is, iPS cells are the first regenerative medicine method (self replication) to regenerate tissues or organs without using ovaries.

We cannot ignore history.

I might sound harsh, but science cannot ignore history.

Moreover, I humbly believe that I am the first in history to logically demonstrate the concept of initialization in science.

My grandfather came up with safety razor blades, i.e., magic razors, and obtained a utility model.

So, as you see, the concept of initialization is a talent inherent in the members of the Matsunaga family.

iPS is a pure medical discovery, and thus cannot ignore the mechanism of self-organization that has been established biologically.

STAP cells do not exist.

Is it not because the Yamanaka gene is injected by itself and replicated by the mechanism of iPS that newt hands regenerate?

Otherwise, it cannot be explained.

Does not this mean that newts are capable of regenerating themselves?

It would be reasonable to first find out which part of a newt's body embodies such a function, which is a commonly known primitive mistake.

However, does not the fact that not only the nerve tissue but also parts of the body replicate themselves relate to replicating the reproductive function (although unknown exactly)?

Then we can deduce that the ethical regulations that cloning technology is prohibited by iPS technology should not be studied have been violated.

Of course, it would be a different matter if something written as ES or its sample had something with the function of ES cell.

This is, even from the viewpoint of "identical duplication,» is the same as «Monju.»

"Identical duplication" should be prohibited.

iPS duplicates organs and tissues, but this is different from manufacturing products that are the same under the same standard at the factory.

This is because even if it was intended for the products to be the same, they are different products in terms of quantum mechanics.

Moreover, it can be said that this demonstrates the tunnel effect of light.

In quantum mechanics, sometimes virtual phenomena and virtual transitions are caused without breaking a conservation law.

It can be said that the machine in Figure 3 is a picture of virtual particle interactions.

This is suitable for automatic control of computers, as well as for power transmission since it is similar to the method of AC source.

In addition, it can be also said that Figure 3 utilizes the structure of a gas cylinder.

Gravity is the pressure of gas and the bars are double-folded structures, but if these are considered in combination, it is easy to understand.

Then, in this case the pressure of the gas is restored.

Definition of Mass

Mass is surplus energy generated by energy exchange.

Then, how do we explain inertial mass!?

Inertial mass comes from an object exchanging space and energy.

Gravity also exchanges space and energy, and is seen in space getting distorted by gravity in gravitational lens.

My readers probably already know that in terms of the theory of relativity the gravity distorts the space.

Is not universal gravitation also distorting the space, though only a bit, as seen in the experiments of Eötvös…?

Dr. Hawking says the earth makes elliptical motions because the sun distorts the space.

Is not universal gravitation a sum of particles, and its surplus power?

As the light velocity is defined by the oscillation within the cesium atom, light is an electromagnetic wave, but acts on gravity as well, just like with the gravitational lens in the theory of relativity.

Obviously, the space is not bent by stationary objects, but it is by objects in acceleration.

Newton did not define mass, either.

He only defined it in a mathematical equation as a coefficient of motion in his «Philosophiae Naturalis Principia Mathematica.»

Therefore, this is the first in the history of humanity because Newton's was a mere mathematical expression and not a physics definition!

A mathematical expression is only a necessary condition, and not a sufficient condition.

Mass is not just a single parameter on a mathematical expression.

It is one physical quantity.

As with the problem of signs in physics, this is the same kind of problem as conventionally using codes to distinguish between Fermions and Bosons in quantum mechanics.

This has only a relative meaning and otherwise is not particularly meaningful.

Incidentally, in terms of physics, codes are used in describing physical states, and this is explained by Mr. Yoichiro Nambu's «Quark: Second Edition» published by Kodansha Bluebacks.

This problem, or shall I say, customary problems are an important problem that often gets overlooked.

Also, at this point I would like to consider the minus code of universal gravitation.

This minus code can be thought to be minus because the quantized universal gravitational force or gravity (I suppose «gravity» may be better here) is considered to be positive energy when integrated.

Therefore, gravity is the energy of the elementary particles (although it is unknown which unit is) constituting the target object, or the sum of each surplus energy (universal gravitation).

Is not this what Newton tried to say?

As mentioned earlier, I would think this is proven by gluon being responsible for gravity.

In other words, the equation of universal gravitation is a force here, but is described based on the method of physics.

Its content can be gravity, or more precisely, here it is universal gravitation, and has been described in anticipation of quantizing it.

This is consistent with the fact that superstring theory developed in contradiction to time.

Newton invented it as a kind of unified theory.

Therefore, it goes without saying that Coulomb's equation naturally meets charge quantization.

It is an equation as the total amount of charge that would have been quantized.

It seems necessary for the unified theory to think about the origin of mass and charge.

If so, there is no independent special force called gravity, and it can be said that it is a virtual and combined force that humans have conveniently figured out.

That is consistent with the equivalence of the inertial mass and the gravitational mass of Eötvös.

In other words, the actual gravity is a relative thing, which is guaranteed by the equivalence principle.

Also, the space around the object with mass moving with space at a certain acceleration is distorted.

Elliptical motion due to the universal gravitation of the earth is acceleration motion.

So, universal gravitation also distorts space.

Therefore, the distortion of the space by the earth is divided into the component of gravity by the earth itself and the component due to the acceleration of elliptical motion from universal gravity.

The sum of the components is the distortion of space by the earth.

Also, it may be necessary to consider the dragging effect of rotation due to the rotation of the earth.

Actually, Schild proved that the spacetime is bent when observing the red shift of the celestial body.

In reality, the fact that the more the stars are farther from the ground, the farther away they are using the principle of redshifting.

I strongly hope that equivalent principle is local and energy to be global, and thus by merging with my paper it would create a rational theory.

However, it goes without saying that the virtual force becomes important in physics.

If this is certain, superstring theory is also an academic quest for invisible problems.

Therefore, this universe may also be called e a virtual existence.

According to Mr. P. C. W. Davis, the universe may be a programmed computer.

Then, the mechanism of Figure 3 can be said to be an automatic initialization.

In order to quantize gravity, the concept, or rather, the equation, of universal gravitational force was developed, it is preferable to modify the Einstein equation into a concept satisfying the conservation law.

As mentioned above, here is the reason gravity is extremely weak, that is, gravity is the total force of gravitational forces of particles.

However, gravity actually exists, and certainly works.

But, is not it virtual as a physics force?

Indeed, just because it is visible, are we not jumping to a conclusion by saying gravity is complete force!?

Also, is it not more convenient for physically thinking that it is virtual?

Because it is virtual, can it be reproduced on the earth?

If it is not virtual, the scale will be decided.

Then, the collision in my "General Theory of Collision" would also be a virtual one.

III. Concept of Power Management

Electric energy needs to be managed even in the power industry.

Electric power is nothing like hedge funds of the financial sector, which become useful only with the growth of the actual economy.

To rely on an alchemy of modern times called fast breeder reactor «Monju» is a total nonsense, as indicated in «I. Power Generation with Stars' Gravity System.»

That is, the current nuclear fuel cycle does not hold.

However, I imagine fusion physics to become indispensable in the future development of physics because there is a possibility that a star can be defined by whether or not a nuclear fusion takes place at its center.

From this, I deduce that gravity may be generated by nuclear fusions.

In terms of physics, a complex domain is thought to always exist at the center of stars and planets to control the creation of gravity.

In other words, this is singularity, but it can be considered as a complex domain according to the concept of a complex number.

I believe that an elementary domain or rather a complex domain always exists at the center of stars and planets.

For reference, I would like to mention at this point that perhaps the feedback part of Figure 3 is related to this. Specifically, since the feedback part cannot help being asymmetric, I think that it may possess characteristics of a singularity, and it may be possible to explore its ties with gravity.

When nuclear fusions are complete, ordinary stars can no longer produce gravity and die.

I would like to add that black holes may also evaporate without any stars in the vicinity that can serve as their energy.

It is no mistake to call this an inseparable matter from nuclear physics, not as energy, because it falls under the category of the strong interaction.

This will lead to the strong interaction and electroweak unification in terms of a unified theory.

Necessity of power management, that is, a management problem, needs independent power generation, though this may sound idealistic.

The following is a list of issues we face with current efforts in reducing industrial CO_2, and in power generation:

1. Hydroelectricity generation: Pollution from discharged soil and sand
2. Solar thermal power generation: Absolute lack of land, high panel cost, and absolute power generation that is low
3. Wind power generation: Land, expensive windmills, damages to wild birds, and low energy
4. Thermal power generation: Extremely high CO_2 emissions
5. Nuclear power generation: Low economic viability of uranium mining & refining, problems of radioactive contamination, etc.

By the way, the power generation mechanism of existing nuclear power plants was designed in the Meiji Era, and has hardly changed or evolved from its basic principle back then, and every aspect of it is full of issues in terms of pollution, global warming, land and finance.

What current power stations are doing is meaningless in terms of thermodynamics of the earth and profitability.

Also, possession of nuclear power in the name of peace is no different from its possession for military purposes.

Can we say with a certainty that reprocessed nuclear waste is not being used for weaponry?

Or how about used nuclear fuel? Is it not leaking due to the earthquake in 2011?

Also, «Monju» should be completely decommissioned.

To start with, since "Monju" was built with considerations not with respect to natural phenomena, it does not function as energy, and thus decommissioning its furnace is only natural.

In other words, natural phenomena do not allow for producing plutonium from uranium.

I cannot comprehend why our government continues such anti-social acts, and I would think all Japanese nationals are wondering the same.

Also, it is very important that we cast our doubts like this, or otherwise we will face serious problems.

However, nuclear fusions are worthy as research facilities.

For such reasons, though I may seem to be complicating my thesis, I am in no way forcing my readers to consider power generation using stars' gravity system.

But with this mechanism of power generation, electric power management can be realized without loss.

Electricity is the same as currencies in terms of facilities for everyday life, and thus we need electric energy to become MANPOWER of our economy.

Why does the Japanese economy need to rely on MANPOWER?

Not that I do not understand, but to increase the level and efficiency of our economy, we need something (here, energy) that serves as its foundation.

This is too basic for me to even want to describe it.

Is not the old-fashioned concept of the economy invalid at this point?

Also, what is the meaning of economic competitions that go against the nature?

The current economy and labor can no longer support us in our attempts to stay and live as a living thing.

No one can rebel against the nature albeit his/her power to produce things.

In order to make the power generation in this thesis possible, securing general metal becomes an urgent matter.

In other words, how to secure iron is more important than power generation.

Those who control iron are said to control the state, but now we are facing a much more grave problem.

Whoever points out that the machine in Figure 3 no longer needs to be iron is certainly right.

Indeed, I can only sympathize and agree with those who say that they are tired of iron and heavy metals.

When the machine in Figure 3 in «I. Power Generation with Stars' Gravity System" is built, we will deploy it at corporations and households, and with the surplus electricity from it, I believe that it will be possible for electric companies to manage assets as a social electric institution, like a bank.

That is, I believe power companies will be able to act as electricity banks to manage it.

I strongly wish to turn Japan into a kingdom of electricity.

Be it iron or paper, the problem is how we use materials, and thus it is desirable to construct a waste-free cycle of consumption or a cycle of recycling.

To be more specific, basically, things that cannot be recycled should not be produced.

The tasks in future city formation will all be based on this issue with metals.

Specifically, I hope to see substitutes for metals suitable for each of their applications, i.e., the field of physical properties, in the language of physics.

From that, I also hope for an immediate reorganization of ministries and agencies.

This is precisely my dream.

I do not know if I can do it, but it will be the main theme of writing «A new theory of remodeling Japan Archipelago.»

Also, large plants should be nationalized and state-owned.

In other words, for guaranteeing the safe supply of electricity, we must sign a contract with Japanese nationals imposing a cheap fee on them, i.e., a fee as a security deposit.

Let me call this an "electricity contract.»

I propose this because the government should do politics that produce real results or changes.

To start with, how taxation is viewed and done is wrong.

Tax is not to be collected, but gifted.

The government must guarantee doing everything that has to do with human life.

Therefore, we sign a contract with the Japanese citizens whereby they present a security deposit to the government in return for providing safe electric energy.

Thus, electricity must be immediately transitioned to state or quasi-state ownership (my wish is full state ownership).

Thus, assuming that the electricity-based society comes true, where each house becomes powered solely by electricity, all cars are electric, and all fuel comes from electricity, with electricity taking over gas, it will become a market worth 50 trillion, or 60 trillion Japanese yen.

Then we will be able to not only cover, but also repay government bonds.

The current or recent issuance of government bonds is a national disaster.

Also, once Figure 3 gets utilized to generate power, not only will the economy improve but prices will also decline.

If we include the industrial chemistry that requires a large amount of electric energy for product processing, we can expect the market for electric energy to become quite large.

If so, in about 20 years or so, it will be possible to repay the entire government bonds, including its interest.

The wasteful, meaningless issuance of government bonds in recent years is due to the Liberal Democratic Party's «generous treats,» and I do not understand to what end it is being done.

If politicians were doing what they are supposed to, we could have avoided this disaster.

No one must tolerate any more wasteful issuance of government bonds.

I wish the government realized that there was something else to cut down on, and not welfare expenses, and looked right at what is by their feet, such as civil servants' salaries that are higher than in the private sector, and reformed ministries and agencies for the future, and so on.

There are many meaningless public institutions.

To me, most of them are meaningless.

Bringing Figure 3 to the reality is the first step for creating cities of the future.

Notes

I should also talk about gas for households.

Once we replace gas stoves with electric ones, what we will have to tackle next is hot water and bath.

To begin with, solar heat should be used for hot water and bath, and this can be best done by attaching solar systems to roofs as was done in the past, using warm water heated by solar energy.

However, recently, as in all-electric houses, it has been noticed that both bath and hot water can be provided with electricity.

When that happens, the aforementioned solar system will be able to act as an electricity saving device, thereby contributing to form future energy consumption.

IV. Toward the Days of Electricity-Based Societies

It is impossible not to emit CO_2 in the first place, so the task at hand is to figure out how to reduce the emission.

This issue has been often discussed already, but mostly on emissions by households, so I would like to consider cases in industries and the fields of distribution & transportation.

In industries (except for chemical plants, or more precisely, special chemical products), a large amount of electricity is used in the factory line.

In other words, this is a field of physical properties.

Additionally, as aforementioned for petroleum products, I would like to substitute petroleum with something possessing components that are very similar to those of «algae.»

Plastics made from petroleum products require a lot of electricity, as well as aluminum products though they are not made from petroleum.

As for transportation, when gasoline-based cars get substituted with electric cars in the near future, charging of the battery will become a problem, but this can be solved by having each electric car owner car possess 2 sets of batteries.

Since the battery is usually charged at home, it is possible to have one extra battery on hand while having the other charged at home.

It is also natural that batteries are likely to run out while driving, but this will be resolved by turning gas stations to electric stands.

Of course, I assume that the machine in Figure 3 is deployed as well.

Just as a gasoline dealer runs a gas station, an electric company will run an electric stand.

This is an unprecedented attempt, but gasoline traders cannot go out of business, even if we are fine with "Monju" going out of business.

This system will be on a registration-basis, just as with mobile phone companies, and one will be able to exchange batteries at any electric stand, provided it is registered.

It goes without saying that a large amount of electricity will also be needed with all this change.

In the future, as we shift to electric cars, we will suddenly find ourselves in need of electric energy, and I anticipate that solar power generation will not be enough to accommodate this need.

If the current functions of gas are taken over by electricity, it will become a market with net profit of more than 50 trillion or 60 trillion Japanese yen, if we assume that all products in industrial chemistry are replaced with plastics.

Although it is a rough estimate, this market can be expected to generate a net profit of more than 100 trillion Japanese yen.

This will then solve energy problems including its financial aspects, and I think that Japan will become a kingdom of electricity.

In the future, Japan will also become a tax-free country.

This is a fact, not an illusion.

So, although I am being redundant, the current government bonds and their upcoming repayment will be covered by this electricity market of the future, and Japan will no longer be a nation of debts.

When I think about how every household will become powered by electricity only, and how all fuel and energy consumption will be from electricity, it is apparent that an early transition to an electricity-based society is desirable.

Electric vehicles are quiet and thus dangerous, so a siren-like sound device will become necessary.

As for the body of a vehicle, in the future, materials other than iron may be used.

Also, use of iron like today will be impossible in the future because it will be needed for power generators.

That is, the current use of iron is taken for granted too much, and it is necessary to reconsider recycling and use of iron by at least view it as a finite resource.

I wonder if it is all right to mine and use iron?

Does it not impact the earth's geomagnetism?

Certainly iron is produced by lava by volcano, etc., but we cannot count on supply from this, which calls for taking measures urgently.

Therefore, independent energy is absolutely necessary.

In other words, we must not involve citizens, and politics should not sacrifice our everyday life.

The water pipe of construction facilities does not need to be iron, either.

It can be plastic.

In the case of gas, the buried piping is made of plastic.

Plastic is more convenient.

Perhaps the material for electrical equipment wiring may change to non-copper in the future, or other ways of wiring may be invented.

I expect Dr. Hideki Shirakawa's conductive polymers to be applied.

Is it not archaic to use iron in large quantities or keep manufacturing products with it?

Again, I strongly hope that plastic will use «algae» and not petroleum as a raw material.

Also, I expect polymeric semiconductors will be widely used, and not only with currently available computers.

As seen in these cases, it is clear now that we will need a large quantity of electricity for various processes in the field of industrial chemistry.

I have nothing to do with political parties.

I only hope that the content of this book will actually become a reality in our society.

A quick government response is wanted.

In addition, although the acceleration of electric cars is inferior to that of gasoline-powered cars, the former wins in distance since the latter needs to constantly accelerate for stability.

In comparison, electric cars just flow electricity to the motor.

I think electric cars are also superior in braking as well.

Moreover, gasoline-powered cars have more waste than electric cars.

That is, they need one extra step: In a gasoline car, gasoline in the condition of working fluids in the engine first flows to the piston, then gets converted to heat, and is finally used to operate the car.

To put this in terms of physics, electric cars are superior because the fuel (energy) material that serves as the power source does not change, and specifically speaking, it is not a phase change material.

In other words, phase change causes losses in the rate of energy conversion, as one cause (though not necessarily the only one).

With electric cars, electricity merely flows to the motor, and hence they are considered to be more efficient.

I would think that gasoline-based cars have many failures as well.

V. On Global Warming

Though later global warming would continue to accelerate, before I was born, the overall average temperature of the earth increased by 1 degree since the Industrial Revolution until about 1970.
Since then, global warming has been accelerating more rapidly than ever.
Though it seems that we have managed it somehow until recently, now it has come to a point where we cannot stop it.
It is said that a mere 1 degree increase in the average temperature of the earth creates a considerable amount of impact on our environment.
If further increases are expected, what will become of the environment in the future?
As of 2014, this increase is already more than 1 degree.
The government goal of CO_2 reduction by 25% compared to the level in 1990 is only for the sake of the Japanese economy.
Though I have not done the exact math, I think it is necessary to reduce it by at least 50% from the level in 1990.
Even now, at least 50% or more of reduction is necessary, or perhaps a lot more.
The goal may be close to 100%.
This may be only natural for the earth.
Otherwise, there is no point in reducing carbon dioxide.
There is also work to be done to absorb the cumulative amount emitted so far.
If it exceeds a certain amount, i.e., the entropy in thermodynamics of the earth, it will be irreparable.
Perhaps mankind has already stepped over that point of no return.
In particular, the climate is unique in each region, and it would not be an overstatement to call Japan a nation of localized cultures.
Global warming may destroy the characteristics of these localized cultures, and come to think of it, is not it the reason for seeing less and less, or no difference in regional characteristics?
The same is happening in other parts of the world.
To put it in practical terms, it is not enough to merely reduce carbon dioxide emissions, but, though this may sound extreme, we must reduce it to the amount emitted before the Industrial Revolution, or even less than that amount.
Ideally it is the latter.
Although it is impossible, it is set as a goal and it is necessary to increase the absorption amount to more than that before the Industrial Revolution.
Nevertheless, the amount emitted needs to be kept below that before the Industrial Revolution because we also have the cumulative amount emitted so far.
This is absolutely not an exaggeration.
For this, we must stop deforestation as well as the use of fossil fuels and other fuels that emit carbon dioxide.
Tree planting is also the minimum that we should do.
Even then, the first thing we need is the machine in Figure 3, at minimum.
Therefore, it goes without saying that reconsideration and reformation of industrial technologies is indispensable.
Restrictions on the use of substances emitting carbon dioxide and large-scale tree planting are also the absolute minimum we need to do.
As aforementioned, it is not intended to completely stop the use of substances emitting carbon dioxide, but rather we must aim at reducing the total amount of carbon dioxide or the entropy in thermodynamics of the earth.
It is not a matter of completely suppressing carbon dioxide emissions, but we should calculate the upper limit of emissions, that is, the safety factor.
At least, we have to contain carbon dioxide emissions to the level so as not to melt the Arctic ice, and my readers probably already know that the majority of it has already melted.
The environment on the earth used to hold in such a way to maintain symmetry in thermodynamics.
Needless to say, the collapse of this symmetry leads first to global warming.
To put it in the language of physics, entropy starts increasing rapidly at the moment symmetry voluntarily breaks.

In other words, global warming progresses rapidly, and once its cycle becomes a matter of course, it is no longer unstoppable.

Based on the essence of this thesis, it can be predicted that if the symmetry of thermodynamics breaks, then the consumption of the entropy by the Arctic will dramatically progress.

The entropy in the thermodynamics of the earth has increased by the economic activities of mankind, and thus must be reduced by the same activities.

Without it, the economy will not be able to regenerate, and even if we do without it, that would be a false economic revival.

Do humans also have to follow the second law of thermodynamics, that is, the law of increasing entropy?

I want to stop imagining that the average temperature of the earth will rise by 2 or 3 degrees.

I hope that it will not be the case, but unless current consumption habits changes, it is easy to imagine that global warming will continue, in contrary to my hopes.

Perhaps in reality the temperature may already have gone up 2 or 3 degrees.

I do not want my previous prediction (long ago, in 2010 probably, I had predicted that the average temperature of the earth would rise by 2 or 3 degrees) to come true.

I hope for an economic revival in a low carbon society that does not emit carbon dioxide.

A low carbon society is feasible.

The question is how to think about the usage of metal.

A different non-hazardous material with the same properties as metal is needed as a substitute.

If we assume that we do not do anything about it now, how much land will be lost on the earth?

Even if CO_2 reduction by 25%, advocated by the government with considerations given only to the economy, is done, I still think that a considerable part of our land will go under the ocean.

In order to reduce the speed of entropy increases in the earth's heat by reducing substances and CO_2 that cause global warming, we need to reduce more CO_2 than necessary to stop the future increases in heat entropy.

I hope for the Japanese government to set reduction targets based on such scientific grounds.

The current global warming has already come to a point where we cannot mend.

Hakusan, a mountain near my house, has also become so bald with its soil exposed, and its white parts with snow are mostly mottled around the top.

Calculation Method:

1. Obtain the entropy in thermodynamics of the earth
6. Obtain the rate of global warming by CO_2
7. Draw curves for 1 and 2 above
8. Adjust the curves in 3 above so that 2 wins over 1

In this calculation, a curve is obtained until the rates of global warming itself and CO_2-induced global warming decreases against the entropy increase.

It is probably ideal to seek a curve that shows recovery of the cumulative emission.

9. Finally, obtain the amount of reduction needed

We are still left with a question whether it should be allowed to leave something that does not exist in the nature to future generations, such as by liquefying CO_2 and burying it underground.

Such liquefaction is impossible.

Also, can we really completely seal it, while we have witnessed problems such as nuclear waste from nuclear power plants being sealed in concrete, but leaking?

What is the point of continuing businesses that are not suitable for the global environment?

It is a fact that current CO_2 reduction attempts and projects are not reducing it at all.

Liquefaction also needs energy, and it is meaningless if we are emitting CO_2 in the process.

CO_2 reductions are far from being enough.

Even if we reduce CO_2 from human life activities, we are still left with the cumulative amount emitted to deal with.

With that in mind, assuming that we set a standard of CO_2 emissions at the minimum level required for the life activities of mankind, we must suppress CO_2 emissions equal to or below that standard.

Suppressing it below that standard is the same as increasing the absorption of carbon dioxide.

Based on that assumption, a long-term development of science and technology must be considered. However, even if we can say that we have reduced CO_2 for the immediate future, our final destination is power generation because it is apparent that current CO_2 reductions alone cannot prevent global warming.

The entropy in thermodynamics of the earth has already exceeded its upper limit, and when it exceeds a certain level, i.e., the entropy, global warming will progress rapidly.

Not as gradually as before, because this is what is causing global warming.

Ice in the Arctic Circle and Antarctic has been working to keep the entropy in thermodynamics of the earth low until now for stable thermodynamics.

It is the winter of 2014-2015 now as I write this, and it has been constantly snowing.

Has all the ice in the Arctic melted?

Perhaps this snow is the last portion of it.

I hope the Arctic ice will return to its original state soon.

However, it has already exceeded the entropy of thermodynamics of the earth due to the recent global warming.

Global warming has become a serious issue due to the increase in entropy.

How many years will it take to reverse this?

Moreover, if humans step into the land that was permafrost where temperature has risen due to global warming, and methane hydrate is discharged from the soil containing that used to contain frozen methane hydrate, due to living activities, etc., global warming will further accelerate.

Methane hydrate should never be mined, even if all else was mined.

Agricultural carbon dioxide should be absorbed as well.

If food self-sufficiency is realized not only in Japan but each of the other countries of the world, carbon dioxide absorption will be realized somewhat by food consumption without waste.

The current global warming caused by carbon dioxide is almost a natural disaster.

I do not want to follow in the footsteps of Mr. Shimazaki, Professor Emeritus at the University of Tokyo.

He had predicted that the magnitude of the 2011 Great East Japan Earthquake to be 9.0, and the height of tsunami from this earthquake to be about the level as the actual one, but then he was politically pressured into lowering his predictions to magnitude 8.6.

I do not wish people to label me as someone who could prevent global warming, but did not do anything for it.

I may be redundant, but it is natural or rather absolutely necessary to do the complete opposite of current economic activities in order to lower the entropy in thermodynamics of the earth.

That is, absorption of CO_2.

In industries, the balance of absorption and emission of carbon dioxide can become zero.

What we will be left with then is the cumulative amount emitted.

Epilogue: On The Essence of Electricity and Quantization of Gravity

Regarding a series of descriptions so far, I would like to explain the essence of electricity.

Do not be alarmed, readers, for it is not the definition of electricity.

Topics on electricity vary from static electricity and Ampère's circuital law to Maxwell's equations.

Maxwell, indeed, as I recall, invented Maxwell equations to prove or protect some kind of a conservation law.

Heaviside is the one who summarized Maxwell's equations into its current 4 equations.

Maxwell is also well known for completing his equations assuming that the electromagnetic field is made of a certain machine.

He also aimed at unifying electromagnetism, and though a bit rough, Neater is the one who later proved it mathematically.

Physics is a history of unifications.

But one might argue that there is no energy to be converted to electricity in Figure 3 because it cannot be felt with the body unless accompanied by heat or organic matter as aforementioned.

However, in psychiatry there is a method of treatment where electricity flows through the head of a patient as a therapy.

This is electricity that human beings have as an instinct in judging good and evil, and thus humans also have electricity in them.

Electric reactions in living things are also seen in reflex movements of frogs, which were studied by Galvani approximately in 1790.

How he studied them, shortly put, was hanging a frog's muscles on a grid outside a window and observing the muscle movements as the thunder roared. This is the so-called "animal electricity.»

Therefore, it seems it could be felt with the physical body, and not a daydream.

Perhaps it is more appropriate to say, «The earth also has electricity.»

With all that, I think we can actually experience and feel how the entire power generation system in Figure 3 generates electricity.

I may be going too far in saying this, but it is also electricity as a physical action of criminal psychology.

Also, in elementary particle physics, it is a fact that energy may be generated out of nothing.

The creation of the universe from nothingness is also a mechanism of producing energy from an apparently absent place.The world has energy.

By the way, it seems to me that the target for quantization of gravity, i.e., sphere, is too large and too difficult.

Gravity is impossible to repel and perturbation diverges, but is it necessary to incorporate gravity, to start with?

Would not we be quantizing gravity if Pf integration became possible by transforming or improving the equation of the general theory of relativity into an equation that satisfies a conservation law and contains a singularity?

Gravity is a contradiction in creating impacts up to infinity, while having a finite value.

Quantization of electromagnetic fields owes it to a conservation law.

Needless to say, black holes are important in knowing the structure of gravity.

I refer to this because definitions and their substances are different.

A definition is a common decision in recognizing an object, whereas substance or essence becomes meaningful and reveals itself when its definition is realized or operated by being actually experimented or used in devices.

In other words, we need to assume that gravity has been quantized and develop superstring theory, and then perhaps we will naturally understand the gravity inside planets as well as the earth itself.

Quantization of gravity and unification of forces are not a contraposition.

Inside the earth's nucleus gravity may be 0 (prevention of gravitational singularity), but there is a magnetic field.

It is interesting to study the earth from the electromagnetic point of view.

But, before that, we need to unify forces.

Is unification of forces possible, including gravity?

One way to think about it is that gravity is not an independent force, but rather a complex force of magnetic fields, electric fields and strong / weak interactions.

A characteristic of gravity is initialization.

The keyword here is initialization, and thus it can be said that light gets bent by gravity, i.e., unification of forces.

Are the size and mass (gravity here) of a star not decided, to some extent, by the space, i.e., its energy?

I think this is how the sun and the earth exist as different objects.

In terms of quantum mechanics, although I am not sure if it applies here, in accordance with Pauli exclusion principle…

So, this is why I suggest to first quantize the space as an attempt to quantize gravity.

I may seem to contradict myself, but I am merely stating a fact.

In my theory, if the length becomes a complex number, equation (*) can be considered as the first fractional transformation.

Additionally, it can be thought that there is no gravity without substance.

It is also true that with gravity clear phenomena are seen on the outside where it occurs.

The common theory is, «Black holes are stars whose gravity wins over their internal pressure, resulting in getting crushed,» but if we assume that gravity is the comprehensive force caused by nuclear fusion inside stars, the gravity outside the black hole (out of the event horizon) can be deduced as surplus force inside the black hole (within the event horizon).

It is more like stars receiving pressure from the sum of the gravitational energy of the outside of the stars, rather than getting crushed by its own weight.

I believe that when stars collapse, according to the general theory of relativity, the geometry outside them changes.

My analysis is as follows: When stars do not make nuclear fusions, they can no longer withstand the total gravitational energy outside them, on top of the total gravitational energy inside themselves needed to keep their own shapes, the stars collapse, neutron explosions take place, and turn into the black hole state.

Regarding the nature of gravity outside stars, this means that further analysis is required according to universal gravitation and the general theory of relativity.

I take gravity as a remote action of a star to be a surplus force of gravity inside the star.

Also, as aforementioned, it is necessary to reconsider light in regard to its behavior as if it has mass when moving through substance.

It is common to say in terms of the theory of relativity, «Definitions cannot be proven,» but I think a distinction must be made between the definition of light and its substance.

I would like to question once again the suitability of mass conversion for light.

Some people strongly claim that light has mass as well because in terms of the general theory of relativity, fields are represented by a tensor.

That is, the general theory of relativity treats space in general, as well as space as a path of light, as substances.

Since the theory of relativity treats space as a field, this is natural in consideration of quantization.

Here applies Graviton's set of 3 on quantization of gravity: Gravity, space and virtual particle.

In the gravitational lens, light gets bent by the gravity of a star because gravity acts on energy.

Gravity functions only when given energy, not a place or force.

Light has energy as well.

Einstein manually computed an error of the bent angle to its one-hundredth precision, but if mass conversion was possible back then, he may have known it.

In other words, should we call the tensor used in obtaining the bending direction (angle) of light caused by the distortion of the space according to the general relativity theory the mass tensor?

Therefore, is it not possible to calculate how much light was pulled based on the simultaneous equations of mass converted equations and equations of universal gravitational force?

Also, is the mass of light really zero?

Assuming that it is, it can be concluded that there is such a thing as free space with nothing.

The above assumption of the mass being 0 was made for reasons of convenience in order to establish the electromagnetic theory.

Then, is the current vacuum speed of light, expressed as follows, a real value?

$C = 2.99792458 \times 10^8$ (m/s)

This is commonly taken as a definition, but it is an electromagnetic one.

In space, the moment light turns, its speed changes.

Is it really possible to have space without any force working?

In space, some kind of gravity is always at work.

But perhaps in the theory of relativity, what gravity is not dependent on any system and what does not depend on any force.

That is, a correct definition of vacuum is needed.

Shall we call it vacuum without perturbation…?

For example, it is necessary to consider the inside of an atom and such.

Democritus defined the vacuum in space, whereas Newton defined vacuum inside the atom.

If these 2 vacuums are the same, the equation of electric law (Coulomb's law) and the equation of gravity (law of universal gravitation) are symmetrical.

In other words, satisfying duality becomes ordinary.

At the same time, it cannot be stated that it is the same inside space and inside atoms.

Therefore, I do not believe that gravity is in the same position as the other 3 forces.

This means that it is necessary to discuss something we shall call real vacuum.

Even in the vacuum, there are substances.

With the Big Bang, it is said that the universe came about from nothing, but energy does exist indeed.

This is called a false vacuum.

What I am referring to in this thesis is «the» vacuum of vacuums.

Once again, the space is also a matter.

Therefore, the current light speed is provisional.

Theories need to be verified against the reality.

In elementary particle physics, as long as c = 1 represents light due to simplicity of the standard model, it will be necessary to mention it in order to explore ways to a new unified theory.

The same goes for Planck's constant.

Gravity is a force at best and is different from quantization of light.

Light has been quantized in physical phenomena including forces.

In fact, there is also a technique called Laser Optical Tweezers.

The Meson Theory by physicist Hideki Yukawa also mentions this.

However, quantizing forces, that is, gravity, is nothing but a matter of handling secondary things, and naturally the divergence of perturbation cannot be prevented.

Quantization of gravity is mechanically impossible.

Gravity does possess a force and a field.

However, the gravitational field is a tensor field, not a vector field.

Thus, this leads me to predict gravity to be a tensor force because Graviton is said to be a virtual particle.

Therefore, it is impossible to explain it as a force acting on a mass point.

So, as quantum mechanics of the gravitational field, space is quantized.

As aforementioned, I am proposing to quantize the tensor field since the space is also a matter.

Since Graviton is a virtual particle, it is difficult to say that we have all the 3 components of quantization.

Since the field is also a tensor field, it is not a normal place.

How will we interpret and solve this?

I would like to hope for results from future researches on this, though it may be quite difficult.

Readers might wonder why I am contradicting myself, and the reason is that the black hole and gravity quantization cannot be separated, and since this is a fact, we must accept it as such.

If gravity is the sum of the gravitational forces of particles constituting stars and planets, quantization should be viewed from this standpoint, and if there is such a theory, superstring theory will be it.

This is because what was great about Newton was merely deriving the equations (macros) of universal gravity just like Coulomb's equations (micro), and demonstrating that equations for global phenomena as well as micro phenomena hold even in macro phenomena.

A major characteristic is that both microscopic forces indicate close distances, while macro forces far distances.

Let us predict that the Higgs mechanism is a microscopic picture and gravity a macro one.

The equation of universal gravitation is an expression connecting the micro and macro.

The theory of electromagnetism could explain macroscopic phenomena such as Coulomb's law since it could be quantized.

If gravity is not quantized, I first propose that energy is present.

Since the equation for universal gravitation describes macroscopic phenomena, we should be able to establish a concept of gravity that matches both macroscopic and microscopic phenomena.

To do that, energy must first be quantized.

Furthermore, for that, we may be able to approximate that singularity such as small planets, e.g., the earth, do not need to be considered.

Or, rather its effect may be small.

Therefore, I predict that we will need to think about a celestial body with the black hole possibility (more than 8 times the solar mass).

The equation of universal gravitation is an equation that has exactly the same form as the Coulomb equation of electromagnetism.

But that does not mean I think that gravity can be quantized.

At the same time, it is also true that we will gain a great benefit of finding other information in physics by studying it.

To that end, it will become essential to solve the singularity problem.

In superstring theory, discarding the pointillist image and considering the size means discarding quantization.

In addition, we must not forget that gravity is a nonlinear phenomenon.

That is, though it is unknown whether gravity is a complex force of electromagnetic interaction or strong / weak interaction, but we can say that perturbation divergence proves that gravity results from such complex force.

Actually, we know for a fact that gravity is extremely weaker than the other 3 forces.

As Newton says, gravity is a microscopic force inside a star, and the above merely paraphrased this in the language of our modern days.

In scientific developments, it is logical to question whether meddling with a law within a law has any meaning.

Though I would rather not say this myself, but quantization of gravity may be mathematically impossible. Antinomy?

This is why with superstring theory we pursue consistency.

The Einstein equation must be refined to satisfy a conservation law and make it an equation and theory including singularity, that is, the quantum theory of gravity.

Normally, the effect of gravity is the same on planets, but with black holes, the effects of quantum mechanics cannot be avoided.

Compared to this, verifying the quantization of light and verifying the phenomenon of gravity quantization are opposite in time.

This is because verifying the phenomenon of quantization of light needs the verification of particles that will be generated onwards, whereas verifying the phenomenon of gravity quantization requires verifying the final state of planets.

This means the history of superstring theory developing in contradiction to the passing of time.

If so, to quantize gravity it is necessary to assume that the gravity of black holes is a phenomenon that will take place in the time to come.

As a result, beyond black holes, there may be a cosmic creation due to an inflation.

By the way, Penrose's «The Waterfall by M. C. Escher» proved that it was made possible thanks to fully embedding phenomena which cannot take place in 3 dimensions into 2 dimensions.

3-dimensional phenomena cannot be completely or accurately drawn in 2 dimensions.

Based on this, the Waterfall by M. C. Escher holds for a person who lives in 2 dimensions.

Obviously, the Waterfall by M. C. Escher does not hold in 3 dimensions, and here is the reason the theory of relativity holds even if it breaks a conservation law.

Indeed, the special theory of relativity is based on the 2-dimensional Pythagorean theorem, and as long as we are in 2 dimensions, we cannot help but break a conservation law.

Is it not ironic that what we use to explain in 1 dimension or 2 dimensions breaks a conservation law in 3 dimensions?

This is quite a difficult thing to accept, but it cannot be helped.

Why does the theory of relativity hold even if it breaks a conservation law?

Galaxies are 2-dimensional.

This symbolizes the holographic principle.

Strictly speaking, it is a pancake type, but not clear why.

One possibility is the idea that the center of the galaxy is a black hole.

But as it approaches the center, energy cannot be suppressed with only the horizontal component, and energy expands to the vertical component.

In the vicinity of the galaxy center, stars and planets are pressing each other.

It is thought that this force is leaking out to the third dimension which is not influenced by 2 dimensions.

But this is slightly three-dimensional.

Here, the concept of D-branes becomes necessary.

In the black hole, information is recorded two-dimensionally, i.e., the holographic principle.

Does this not mean that in the unit of a galaxy a conservation law is broken?

If we are in 2 dimensions, elements of the Waterfall by M. C. Escher always come in.

However, D-branes are based on 3 dimensions, and on the scale of D-branes, a conservation law is maintained.

The surplus dimension guarantees it.

D-branes were conceived to protect conservation laws.

We only need to discuss the relativeness of waves to obtain mathematical proofs.

In other words, we need to prove why the phase velocity and the group velocity match with each other with a precision of 1/500000.

In fluid dynamics it is said that phase velocity and group velocity do not match when the medium is dispersive.

That is, it seems easy to understand if beat was considered.

Considering further dimensions based on 2 dimensions will give us an answer on why a conservation law gets broken.

The phase velocity and the group velocity may not match when the former exceeds the light speed, thereby breaking causality, but the group velocity does not.

As for the relativity of physics, we can expect everything to get connected, and the theory of relativity and quantum mechanics to be integrated without any theoretical contradictions, once we solve the relativeness of this wave.

However, as aforementioned, this poses a super challenge in terms of mathematics, one that can even join the 7 super challenges of the world.

I think that the pulsation of the earth corresponds to the beatings of the earth's gravitational waves.

Also, in inflation, expansion of the space beyond the speed of light corresponds to the phase velocity.

Therefore, we can conclude that Figure 3, which took size into consideration to start with, is a 3-dimensional version of the Waterfall by M. C. Escher.

This is because if we look at Figure 3 as though we live in 10 dimensions, we can say that Figure 3 holds in 3 dimensions, but not in 10 dimensions.

Of course, it would be an entirely different matter if the space we live was 10-dimensional, not 3-dimensional, and if the other dimensions were rolled up.

That is, the surplus dimension guarantees the law of conservation of energy, and the idea that energy comes from nothingness does not exit in 10 dimensions.

I wonder if more complicated things would be possible in 10 dimensions?

Then we would be able to describe 3 dimensions completely.

In other words, we would be able to explain phenomena of higher dimensions.

If we assume that the dimension is embedded in such a 3-dimensional universe as well, the remaining 7 dimensions of superstring theory can be said to be realistic existences, for our universe was also originally embedded in dimensions.

Just as people in 3 dimensions think that the Waterfall by M. C. Escher cannot take place, those who live in 10 dimensions may not believe that 3 dimensions could be real.

The world where the reality is no longer real is exactly quantum mechanics.

And black holes are rich in electromagnetic phenomena.

However, we cannot help predicting that gravity is a complex force.

Particles that mediate forces are both a field and power.

In other words, we do not need 2 independent forces that give weight.

Defining a mechanism that weighs in an inertial system rather than gravity is meaningful in physics, and that is where mass is obtained from inertial forces and weak interactions.

Therefore, there are 3 types of independent forces in the nature: Electromagnetic force, weak force, strong force.

There are no physical phenomena in mathematical formulas.

This is hard for me to say, but it is true to care too much about formalities if one pursues only mathematical expressions.

For example, a magnetic monopole (monopole) is often taken as an example, but from the standpoint of a unified theory, it is said that it might have existed at the time of space creation, that is, in the Big Bang.

There are some difficulties in concluding so simply like that.

However, it is common for that form to become a reality in physics.

Mathematics, or rather, equations are indispensable in physics, but there is a limit to verbal expressions alone, and this is where relativity (method) saves us.

Then, by many phenomena, a unified theory is created and becomes a mathematical formula.

Therefore, quantum gravity theory cannot be said to conform to it.

The quantum gravity theory encompasses antinomy.

But science is what goes beyond.

If we assume that the quantization of gravity is successful, and that a Graviton virtual particle has been discovered, how do we explain the space that is a tensor field?

This is very intriguing.

Physics creates differential equations from phenomena and obtain answers from boundary conditions, but we also have to find the phenomena themselves.

There is no boundary condition there.

It is also true that there are non-existent phenomena, such as the universal creation from nothingness according to Dr. Hawking.

It is noteworthy that the absence of a boundary condition itself is a boundary condition.

In other words, like the Möbius strip, at the beginning and the end, it is like both 2 sides of the same coin, and even if space creation began from inflation from other black holes in the universe, it cannot be recognized.

That is because singularity connects different physical conditions.

Now, one final word about light.

Light with a mass of 0 and electromagnetic energy means, from energy point of view, that a neutrino is the light's electromagnetic energy converted into electrically neutral mass.

This is because neutrinos are electrically neutral, and as such, they hardly interact.

Since they do have mass, they have weak interactions by the Higgs mechanism.

There is a limit to converting the light's electromagnetic energy into neutral mass.

It can then be deducted that this is where the problem with the neutrino generation is.

That is, the neutrino has only kinetic energy.

It is a convenient fact for relativity that a photon has energy alone.

Therefore, this also applies to the fact that photons are particles (gauge particles) for interaction.

The Higgs particles are particles that convert energy into mass, and based on that, we can also explain how light acts as if it has mass as it moves through matter.

This is also the reason the electromagnetic energy of light is small, and so is the mass of neutrinos.

In addition, it runs almost at the light speed (sub light speed).

It can be said that if the electromagnetic energy of light exceeds a certain limit, it becomes another elementary particle, or that other elementary particles are also what light changes into.

I believe that the conversion takes place with a certain range as indicated in Figure 3.

Then, based on the light, we may be able to create a periodic table of elementary particles indicating the range of sub elementary particles, and other ranges for elementary particles.

Also, I would think we will be able to know the range of energy for the periodic table.

With this book nearing its end, I must mention that I have never seen books, articles or papers that quantitatively or qualitatively discusses energy, i.e., from the viewpoint of the elementary particle theory.

Figure 3 I devised is the world's first gravity generator.

Needless to say, it is earthquake-resistant and philosophically new because physics is a natural philosophy.

The conversion law of force, i.e., Newton's equation of motion, and the conversion law of electromagnetic field, i.e., the conversion law by Lorentz force can be defined and exist, but the energy conversion law does not exist.

I sincerely wish for the concept of quantum mechanical energy to be established.

Although this may be just me, I would like to seek the possibilities of how much of an intelligent evolution humans can make.

Physics is also a discipline on how well you can draw out the virtual domain.

In addition, it becomes meaningful through interaction.

Science is hungry for new pictures.

Perhaps it would not be such a bad thing if scientific pictures exploded as renaissance in science, just like Mr. Taro Okamoto.

I want to become Salvador Dali of physics, and hope that more and more new pictures will be continuously proposed.

Older physicists have given rigorous results to theories, and in response to that, young ones need to show many images to accompanying them.

Also, without energy, quantum mechanics or the elementary particle theory cannot be discussed.

I wish physicists to be more realistic, keeping in mind that existing phenomena or phenomena contained in the nature are an actual part of the history.

There is no formula that distributes all truth, all harmony, and all simplicity to us.

Looking at a theory is not providing an overall insight because seeing all things also means seeing nothing.

I strongly hope that there will be physicists who will study more about energy, and I do not mean nuclear energy or renewable natural energy as we know it currently.

Definitely not thermal power, either.

Electric power companies are using more and more coal to maintain profitability, thereby promoting global warming.

A low-carbon society means power generation mimicking weak interactions to be realized.

Science is not literature, but perhaps such a thing as pure scientific literature could exist.

Also, while people betray one another, physics do not betray people.

Even now I regret that I had done terrible things to Professors Misu and Suzuki for making them handle my drop-out procedures.

I wish we could avoid situations where students need to drop out of college for financial reasons.

What is more, I think the government should be responsible for guaranteeing students with high grades or researches means to make a living, such as scholarships and grants.

My case did involve political reasons, though….

I wish my researches did not have to get destroyed for such meaningless reasons that had nothing to do with science.

Also, I think that the qualities of scientists can be determined by how much they love the nature.

Finally, I would like to make an important statement in physics terms, consistent with the content of this book.

Physics strictly forbids research on weapons and arms involved with wars.

This is a fact, not an exaggeration.

Although it may sound like one, if you borrow the word of Galilei «The machine in Figure 3 still moves.»

Also, finally, I can say that I have uncovered the secret of stars' gravitational mechanism (star's gravity system).

However, this has not solved all the problems with gravity, but merely described one aspect of it.

We should not forget that the problem of singularity is still left to deal with.

With this, I would like to put down my pen.

So, I have succeeded in blowing souls into machines, and am pleased to have been able to raise this as a topic, despite the turmoil I have felt, almost like a mother giving a birth.

In addition, I would like my readers to forgive me for at times acting as a golden parachute due to the nature of this paper.

I am aware that it is my shortcoming, and yet I ask for your forgiveness.

Notes:

In the conclusions of «Ⅰ. Power Generation Using the Star Gravity System,» I erred knowingly in order to prove the laws of physics.

Newton's classical theory holds for weak gravity or slow speed, but I doubt that it cannot be applied to black holes.

But, when I look at black holes broadly, I anticipate that his theory will revive.

That is, Newtonian mechanics apply both when we focus on one star and when we focus on thousands of star groups.

That is, Newtonian mechanics holds in both one star (micro) and thousands (big).

Maybe it is as good as expressing post-Newton approximation with words.

It has been recently stated that a conservation law is broken even in the galaxy unit.

The approximation method applies in physics as long as it does not influence the law.

Again, this is because it is geometry and not theory.

Also, one may say that since energy is gravitational, it is negative.

Although its potential is certainly negative, it is natural that the gravitational energy in a total amount, i.e., the integral value is positive (positive energy theorem).

Otherwise, it will no longer be a matter of physics.

In Lieu of Corrections

In the second edition, I had predicted that the Higgs particles did not exist, but as I re-read it later, I realized that it might not have communicated my true intention.

For this reason, I would like to emphasize that my thesis is a new picture of the Higgs mechanism and is consistent with the Higgs mechanism.

I would like to take this opportunity to apologize and make this note a correction to the said prediction in the second edition.

In other words, the Higgs particles are indeed essential.

Elementary particles collide with the Higgs particles to obtain mass, but what I attempted to do was demonstrate a theory as totalization, and how to calculate the said mass.

Without the Higgs particles, a conservation law would not be satisfied.

It is wrong to think about only the Higgs field and ignore particles.

In other words, according to the quantum field theory, field = particle, and the Higgs particle satisfies it.

In addition, the presence of particles is completely filled because it also contains force (weak interaction).

3 sets of quantization.

There is a feeling that it has been forgotten that the Higgs particles were conceived to protect a conservation law.

I should have recalled that a conservation law also stayed a transverse idea throughout this thesis.

The Higgs particles were essential in a gauge theory.

The mass of elementary particles is given by the Higgs mechanism, and its energy depends on the extra dimension.

Lastly, I would like to apologize again to my readers for some overstatements in this thesis due to its complications and complexities.

Referential Resources (A Partial List)

Sir Isaac Newton, «Philosophiae Naturalis Principia Mathematica,» 1977 (Japanese translation by Mashita Nakano), Japanese translation published by Kodansha Ltd.

Keiji Kobayashi, «Fast Breeder Reactor Monju,» 1994, Nanatsumori Shoten

Toshiaki Kaneko, "Conservation of Momentum and Non-Preservation,» 1999, Kyoritsu Shuppan Co., Ltd.

Jerry B. Marion, «Classical Dynamics of Particles and Systems,» 1973 (Japanese translation by Chihiro Ihara), Kinokuniya Company Ltd.

Shigenobu Sagawa, «Theory of Electromagnetics,» 1991, Kinokuniya Company Ltd.

Special Article "Questioning Time and Space,» Mathematical Science, December 2007, Saiensu-sha Co., Ltd.

Special Article "Quantum Mechanics and The Theory of Relativity,» Mathematical Science, April 2000, Saiensu-sha Co., Ltd.

Special Article «The Reach of Eigenvalue Problems,» Mathematical Science, November 2006. Saiensu-sha Co., Ltd.

Yoshiharu Kawamura, Special Issue «Learning Modern Elementary Particle Physics with Sample Cases,» Mathematical Science, June 2006, Saiensu-sha Co., Ltd.

Yoshiaki Maeda & Akifumi Sako, Special Issue «Quantization of Geometry,» Mathematical Science, November 2012, Saiensu-sha Co., Ltd.

Special Issue «Field Theory,» Mathematical Science, April 1999, Saiensu-sha Co., Ltd.

Michio Kaku, «Introduction to Superstrings and M-Theory,» 2000 (Japanese Translation by Nobuyoshi Ota), Springer Japan KK (Formerly Known as Springer-Verlag Tokyo, Inc.)

John Gribbin, «Case of the Missing Neutrinos: And Other Curious Phenomena of the Universe,» 2002 (Translation by Ueki Kabusawa), Springer Japan KK (Formerly Known as Springer-Verlag Tokyo, Inc.)

Christine Sutton, «Spaceship Neutrino,» 2007 (Japanese Translation by Atsuro Suzuki), Springer Japan KK (Formerly Known as Springer-Verlag Tokyo, Inc.)

P. C. W. Davies, «Space and Time in the Modern Universe,» 1980 (Japanese Translation by Morikazu Toda & Yutaka Tanaka), Iwanami Gendaizensho Series by Iwanami Shoten Publishers

P. C. W. Davies, «The Edge of Infinity: Naked Singularities and the Destruction of Spacetime,» 1983 (Japanese Translation by Takuya Matsuda & Toshifumi Futamase), Iwanami Gendaizensho Series by Iwanami Shoten Publishers

P. C. W. Davies, «The Search for Gravity Waves,» 1981 (Japanese Translation by Takuya Matsuda), Iwanami Gendaizensho Series by Iwanami Shoten Publishers

Ryoyu Uchiyama, «How Far Has Physics Progressed?»1983, Iwanami Gendaizensho Series by Iwanami Shoten Publishers

Albert Einstein, »The Significance of the Theory of Relativity,» 1963 (Japanese Translation by Kentaro Yano), Iwanami Gendaizensho Series by Iwanami Shoten Publishers

Norikiyo Nagashima, «Fundamentals of Particle Physics Ⅰ & Ⅱ,» 2005, Asakura Publishing Co., Ltd.

Norikiyo Nagashima, «The Standard Theory of Particles and Experiment Basics,» 1999, Asakura Publishing Co., Ltd.

Norikiyo Nagashima, "Development of High Energy Physics,» 2003, Asakura Publishing Co., Ltd.

Kazuhiko Nishijima, »Quantum Mechanics in Terms of the Theory of Relativity,» 2006, BAIFUKAN CO., LTD.

Taichiro Kugo, "Quantum Mechanism of Gauge Fields I & II,» 2002, BAIFUKAN CO., LTD.

Norisuke Sakai, «Quantum Field Theory,» 2007, Shokabo Co., Ltd.

Bogdan Povh, Christoph Scholz, Klaus Rith, Frank Zetsche, «Teilchen und Kerne: Eine Einführung in die physikalischen Konzepte,» 2005 (Japanese Translation by Toshiaki Shibata), Springer Japan KK (Formerly Known as Springer-Verlag Tokyo, Inc.)

Shigeji Fujita & Salvador Godoy, "Quantum Statistical Theory of Superconductivity,» 2001 (Japanese Translation by Yoshinobu Okamura, Tsunehiro Obata, Akira Suzuki, Seiichi Watanabe), Springer Japan KK (Formerly Known as Springer-Verlag Tokyo, Inc.)

Michael Stone, «The Physics of Quantum Field,» 2002 (Japanese Translation by Ueki Kabusawa), Springer Japan KK (Formerly Known as Springer-Verlag Tokyo, Inc.)

Steven Weinberg, «The Discovery Of Subatomic Particles,» 1986 (Japanese Translation by Saburo Honma), NIKKEI SCIENCE Inc.

Yoji Toda, »Can Protons Break?" 1986, Maruzen Publishing Co.,Ltd.

Leon Lederman & Dick Teresi, »The God Particle,» 1997 (Japanese Translation by Kenji Takahashi), Soshisha Publishing Co., Ltd.

David Deutsch, «The Fabric of Reality: The Science of Parallel Universes--and Its Implications,» 1999 (Japanese Translation by Hajime Hayashi), The Asahi Shimbun Company

Special Article «The New Direction of Quantum Field Theory,» Mathematical Science, April 2001, Saiensu-sha Co., Ltd.

Special Article «The Search for Elementary Particles,» Mathematical Science, December 2006, Saiensu-sha Co., Ltd.

John D. Barrow, «The Theories of Everything: The Quest for Ultimate Explanation,» 1999 (Japanese Translation by Hajime Hayashi), Misuzu Shobo

Herman Weyl, «Raum. Zeit. Materie. (Space, Time, Matter),» 2007 (Japanese Translation by Ryoyu Uchiyama), Chikuma Gakugei Bunko Series by Chikumashobo Ltd.

Steven Weinberg, «The First Three Minutes: A Modern View Of The Origin Of The Universe,» 2008 (Japanese Translation by Shinya Obi), Chikuma Gakugei Bunko Series by Chikumashobo Ltd.

Richard P. Feynman & Steven Weinberg, «Elementary Particles and the Laws of Physics,» 2006 (Japanese Translation by Tetsuro Kobayashi), Chikuma Gakugei Bunko Series by Chikumashobo Ltd.

Isao Imai, «Applied Generalized Function I & II,» 1981, Saiensu-sha Co., Ltd.

Fumitaka Sato, «The Theory of Relativity and Cosmology,» 1984, Saiensu-sha Co., Ltd.

Norikiyo Nagashima, «Mysteries of Neutrinos,»1988, Saiensu-sha Co., Ltd.

Special Issue «Development of the Gauge Theory,» Mathematical Science, July 2009, Saiensu-sha Co., Ltd.

Fumitaka Sato & Remo Ruffini, «Black Holes: The General Theory of Relativity and the End of Stars,» 1976, Chuokoron-Shinsha, Inc. (Formerly Known as Chuokoron Inc.)

Haruo Saji, «Wonders of Fluctuations,» 1997, PHP Institute, Inc.

Richard P. Feynman, «The Character of Physical Law,» 2002 (Japanese Translation by Hiroshi Ezawa), Iwanami Gendai Bunko Series by Iwanami Shoten Publishers

Albert Einstein & Leopold Infeld, "The Evolution of Physics,» 1967 (Japanese Translation by Jun Ishihara), Iwanami Shinsho Series by Iwanami Shoten Publishers

Yoshiaki Taniguchi, "Mysteries of Quasar,» 2004, Kodansha Bluebacks

Michio Kaku & Jennifer Trainer Thompson, «Beyond Einstein: The Cosmic Quest for the Theory of the Universe," 1997 (Japanese Translation by Katsumi Kushimoto under Supervision of Tachishige Hirose), Kodansha Bluebacks

Yoichiro Nambu, »Quark: Second Edition,» 1998, Kodansha Bluebacks

Sten F. Odenwald, «The Astronomy Cafe: The Best 365 Questions and Answers from "Ask the Astronomer»,» 2002 (Japanese Translation by Michio Shiobara Under Supervision of Kenichi Kato), Kodansha Bluebacks

Herbert Goldstein, Charles P. Poole & John Safko, «Classical Mechanics,» 2006 (Japanese Translation by Tadashi Yano, Yasuo Yazawa & Kazuhiro Fuchizaki), Yoshioka Shoten

Ryuyo Uchiyama, «Introduction to The General Gauge Field Theory,» 1987, Iwanami Shoten Publishers

Masahiko Suzuki & Tuneyoshi Kamae, «The World of Elementary Particles,» 1981, Iwanami Shinsho Series by Iwanami Shoten Publishers

Richard P. Feynman, «The Character of Physical Law,» 2002 (Japanese Translation by Hiroshi Ezawa), Iwanami Gendai Bunko Series by Iwanami Shoten Publishers

John Willard Milnor, «Singular Points of Complex Hypersurfaces,» 2003 (Japanese Translation by Osamu Saeki & Kazuhiro Sakuma), Springer Japan KK (Formerly Known as Springer-Verlag Tokyo, Inc.)

Yoshiaki Taniguchi & Yoshihide Okumura, «An Invitation to Hyperbolic Geometry,» 1996, BAIFUKAN CO., LTD

Haruichi Yabuki, «Vacuum, Material & Energy,» 1983, Saiensu-sha Co., Ltd.

John Archibald Wheeler, «A Journey into Gravity and Spacetime (Scientific American Library),» especially Chapter 7, 1993 (Japanese Translation by Toshikazu Ebisuzaki), Tokyo Kagaku Dojin Publishing

Brian Greene, «The Elegant Universe: Superstrings, Hidden Dimensions, and the Quest for the Ultimate Theory,» 2002 (Japanese Translation by Hajime Hayashi & Masaru Hayashi), Soshisha Publishing Co., Ltd.

Sheldon L. Glashow, «The Charm of Physics (Masters of Modern Physics),» 1996 (Japanese Translation by Akihiko Fujii), KINOKUNIYA COMPANY LTD.

Lee Smolin, «The Life of the Cosmos,» 2000 (Japanese Translation by Haruyo Nomoto), NHK Publishing, Inc.

George Gamow & Russell Stannard, «The New World of Mr Tompkins,» 2002 (Japanese Translation by Kaoru Aoki), Hakuyosha Publishing Co., Ltd.

Murray Gell‐Mann, «The Quark and the Jaguar: Adventures in the Simple and the Complex,» 1997 (Japanese Translation by Haruyo Nomoto), Soshisha Publishing Co., Ltd.

Alan H. Guth, «The Inflationary Universe,» 1999 (Japanese Translation by Hajime Hayashi & Masaru Hayashi), Hayakawa Publishing Corporation

Stephen W. Hawking, «A Brief History of Time: From the Big Bang to Black Holes, 2005 (Japanese Translation by Hajime Hayashi), Hayakawa Bunko Series by Hayakawa Publishing Corporation

Stephen W. Hawking & Roger Penrose, «The Nature of Space and Time,» 1997 (Japanese Translation by Hajime Hayashi), Hayakawa Publishing Corporation

Steven Weinberg, «Dreams of a Final Theory: The Scientist's Search for the Ultimate Laws of Nature,» 1994 (Japanese Translation by Shinya Obi & Masaaki Kato), DIAMOND, Inc.

P. C. W. Davies, «Superforce,» 1991 (Japanese Translation by Masayoshi Kiguchi), Chijinshokan Co., Ltd.

Charles W. Misner, Kip S. Thorne & John Archibald Wheeler, «Gravitation,» 2011 (Japanese Translation by Masami Wakano), Maruzen Publishing Co.,Ltd.

Wolfgang Ernst Pauli, «Relativitätstheorie,» 2007 (Japanese Translation by Ryuyo Uchiyama), Chikuma Gakugei Bunko Series by Chikumashobo Ltd.

Gaishi Takeuchi, «Lie Algebra and Elementary Particles,» 1983, Shokabo Co., Ltd.

Howard Georgi, «Lie Algebras In Particle Physics: from Isospin To Unified Theories (Frontiers in Physics),» 1991 (Japanese Translation by Taichiro Kugo), Yoshioka Shoten

Lisa Randall, «Warped Passeges,» 2007 (Japanese Translation by Michio Shiobara Under Supervision of Shinji Mukoyama), NHK Publishing, Inc.

Lisa Randall, «Knocking on Heaven's Door,» 2013 (Japanese Translation by Michio Shiobara Under Supervision of Shinji Mukoyama), NHK Publishing, Inc.

Robert P. Charles & C. Mann Crease, «The Second Creation: Makers of the Revolution in 20th-Century Physics,» 2009 (Japanese Translation by Yasuo Shizume, Hajime Hayashi, Yoji Kohara & Hiroshi Okamura), Hayakawa Publishing Corporation

Muneyoshi Yanagi, «40 Years of Folk Craft,» 2011, Iwanami Bunko Series by Iwanami Shoten Publisher

Afterword

Although completing this book was far from easy, as I wrote, I wish successes with super symmetry and completion of the Great Unified Theory (GUT).

I built my theory based on power generation, but I would like this book to be positioned as a mechanism for the Higgs mechanism to provide weight.

I'd like to express my sincere and deep gratitude to my readers for reading this complicated book.

I also hope for future developments.

I feel truly sorry that I did not complete this work in time for the 2011 Great East Japan Earthquake, and would like to dedicate my prayers to its victims.

By the way, as for earthquake countermeasures, by building houses on materials that absorb the tremor, the houses will withstand the tremor.

Lastly, I would like to dedicate this book to my niece Niko Arita who fell ill during writing the first edition of this book.

Also, I'd like to extend my gratitude to Mr. Homaji Yokoyama for organizing my drawings in Microsoft Word.

About the Author

Muneo Matsunaga

- Born on July 20, 1970 in Urawa-City, Saitama Prefecture, Japan
- April 1990: Failed the entrance exam to the University of Tokyo, but enrolled in Tokyo University of Science, with a major in physics (Department of Physics, Faculty of Science Division I)
- March 1994: After staying for 4 years at the university, I failed to complete my thesis for graduation, and ended up leaving without a degree. Why? Financial reasons…? Uncertainties about my own future…? Well, no. I was afraid of working on the theme of this book while at the university, but I was afraid it would get crushed by organizational pressure, or I would only cause the university trouble, and I thought that nobody would understand me.

Occupation: Scientific writer (Past work: «General Theory of Collision: First Edition» & «General Theory of Collision: Second Edition»)

Accomplishments:
- Scoring the second highest grade on a trial entrance exam to Waseda University
- Coming up with ideas for this book at the age of 3
- Completing of reading 2,000 books so far
- Mr. Sakai of Nagoya is my friend (though I think he may be annoyed…)
- Achieving 500 juggles of a soccer ball in my 5th grade
- Receipt of Grade 2 award in abacus arithmetics in my 4th grade, a record for my cram school at the time
- In my 5th grade (of elementary school), I was told that my hearing was at a level high enough to pass a university entrance exam
- Winning the 3rd place in the English speech contest hosted by Urawa City Board of Education
- Certified mechanic of gas equipment (grade 3)
- In my junior year at university, I already had a grasp of Mr. Akira Furusawa's famous idea of quantum teleportation
- I knew what sea waves looked like without learning them from textbooks
- In my junior year at university, I knew what to do in experiments without looking at textbooks
- 2,000 consecutive push-ups achieved in my university years
- Accomplishing more than 1,000 push-ups every day for 1 year
- I was a big kid
- In my 3rd and 4th grades, I wrote in my diary every day until accumulating 40 volumes

Hobbies: Piano, soccer

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